AIMETA: A Proper Perspective to Retrace the Evolution of Italian Mechanics, with a Focus on Solids and Structures

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Abstract This contribution aims at providing a survey on the evolution of theoretical and applied mechanics in Italy in about the last fifty years, as observed through the perspective of the Italian Association of Theoretical and Applied Mechanics (AIMETA). Stages of its development are overviewed, by referring to the carefully collected and organized data/information about a variety of related activities, which include the national congresses and the publication of the international journal *Meccanica*, for dwelling on the presence and the contribution of the five scientific areas—general mechanics, solids, structures, fluids, machines—encompassed by AIMETA. Within this general framework, a focus is also provided on the overall evolution of a specific area of mechanical sciences (solids and structures), with also some qualitative considerations.

Keywords Theoretical and applied mechanics in Italy · General mechanics · Solids · Structures · Fluids · Machines · Historical developments

1 Introduction

The Italian Association of Theoretical and Applied Mechanics (AIMETA) was founded in December 1965, with a notarial deed (Appendix 1), by eight renowned Italian scientists (Appendix 2, Table 1) from Schools of Engineering, active in different areas of mechanics. According to its Statute, AIMETA was established: "(i) to promote the development of theoretical and applied mechanics, through the coordination of research efforts and the organization of national congresses and meetings; (ii) to establish relations with similar associations abroad, and with IUTAM in particular; and (iii) to make known the results of Italian research in Italy and abroad, through the publication of a journal in English. The distinguishing features of the new Association were its interdisciplinary approach and the priority accorded to international relations" [1].

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G. Rega (ed.), *50+ Years of AIMETA*,
https://doi.org/10.1007/978-3-030-94195-6_1

At that time, I was at the beginning of my second year of studies at the Faculty of Engineering of the University of Rome, tackling my first challenging problems in Rational Mechanics. The first AIMETA National Congress I certainly attended was the 5th one, Palermo 1980. Thus, my knowledge of the first decade of AIMETA and beyond is extremely vague, and basically consists of the names (and some faces) of a few important and respected professors of solid and structural mechanics whom I likely encountered elsewhere. Since then, I attended all AIMETA congresses, with the exception of a couple of them (certainly the 20th one, Bologna 2011) due to health reasons.

Thus, I may be not the right person to cover in a comprehensive way the whole AIMETA life, as elapsed in the past 50+ years. Of course, I sincerely apologize for my lack of knowledge of its first glorious decade of activity, and for the ensuing, possibly wrong and incomplete, account of the scientific research conducted in that time interval that I will give in the sequel. However, although missing a huge number of important aspects, I have been living the AIMETA time for about forty years, with variable commitments, but always with dedication, with a feeling of belonging, and with some emotional involvement, too. This is certainly one reason for having been asked to edit this book and write this introductory chapter.

Another reason is likely connected with the circumstance that, over this long time period, I have been active in the area of solids and structural mechanics, thus encompassing two (out of the five) areas of mechanical sciences—the other three being general mechanics, fluid mechanics, and mechanics of machines—into which AIMETA activities are articulated. A subdivision that also reflects, to a certain extent, the organization of engineering studies in Italian universities at an intermediate disciplinary level. In this respect, it is also worth noting that, in the last thirty years or more, the presence of research topics from mechanics of solids and structures, with the involved scientists, has been largely predominant within AIMETA, as discussed forward.

Indeed, starting with the 80s, I have still a relatively good, though variable, memory of Italian research schools in solid and structural mechanics, along with the scientific topics to which they more meaningfully contributed and the involved senior and younger scientists. But I have a definitely poor knowledge of what was going on, along the same lines, in the other three areas.

Thus, on my side, notwithstanding some attempts to also grasp at least a few basic aspects of what was occurring in those companion areas, mostly in more recent times, this is a further meaningful drawback of low acquaintance that strongly limits the appropriateness and significance of what I will be dealing with in the following.

As a result, this survey on the evolution of theoretical and applied mechanics in Italy, as observed through the AIMETA perspective, should be deemed as a combination of two personal viewpoints. The first is concerned with the AIMETA activities in their entirety, as they developed over about the last fifty years. The second reflects the overall evolution of only a part (solids and structures), though important, of mechanical sciences, as perceived by a colleague who has been committed to research in this area for a long time, with a certainly serious attempt of rigorous involvement in science and a spirit of service to the academic community.

2 Up to the End of the 70s: The AIMETA Early Stage

The AIMETA was founded with the "mandate from the Italian National Research Council (CNR) to represent Italy in the International Union of Theoretical and Applied Mechanics (IUTAM)", to which Italy had adhered since 1949, "reviving the ties between Italian researchers and that community, of which Levi Civita had been one of the first promoters" [1].

The AIMETA structure somehow reproduced at the national level the IUTAM organization of mechanical topics into two very large areas (Fluids and Solids), however identifying four main areas of interest (General Mechanics, Mechanics of Solids, Mechanics of Machines, and Mechanics of Fluids), likely also to better reflect the academic and scientific environments behind the eight founders. Indeed, two of them came from theoretical mechanics (Bruno Finzi and Giorgio Sestini), two from solid mechanics (Leo Finzi and Elio Giangreco), two from mechanics of machines (Giovanni Bianchi and Emilio Massa), and two from fluid mechanics (Carlo Ferrari and Giulio Supino). The AIMETA articulation into four areas lasted until the beginning of the 80s, when it was decided to consider the area of solid mechanics as internally articulated into solids and structures (the latter formally introduced as a fifth area starting with the 1986–89 Executive Council), in order to make the evolution of research topics and scientists in the background, occurred over the decade, more apparent. According to the revised Statute, the President of AIMETA (Appendix 2, Table 1) is elected by the Executive Council (Appendix 3), made up of six members elected in turn by the General Assembly of the Association for a four-year term, plus the Past-President.

Less than one year after the establishment of the Association, namely in September 1966, the first double issue of its official journal, *Meccanica*, written in English, was launched under the Editorship of Emilio Massa (Appendix 2, Table 2), with four issues per year being published by a national publishing house. The issue contained a foreword by the first AIMETA President, Bruno Finzi, making reference to Mechanics "in the broadest sense of the word, ….. as extending far into the neighboring realms of Thermodynamics, Electrodynamics, Atomic Physics, … thus being difficult to describe the line of demarcation between Theoretical Mechanics and Mathematical and Theoretical Physics, between Applied Mechanics, Hydraulics, Aerodynamics and Technical Physics" [2].

The main aim of promoting knowledge and information on Italian theoretical, experimental and technical research in the diverse areas of mechanical sciences at the international level was declared explicitly. Accordingly, for a relatively long time, the journal mostly hosted contributions from qualified Italian scientists, despite an international Editorial Board. The first paper by foreign scientists (Bernard Coleman and Morton Gurtin) appeared in the third issue of 1967, and papers co-authored by Italian and foreign scientists were published occasionally, although with an obviously increasing trend over the years.

Browsing through the issues of *Meccanica* until about the end of the 70s, one can get an idea not only of the most frequented research themes but also of the involved

Italian scientists. Most of them were esteemed, and not always easily reachable, academicians and university chair holders, belonging to the generation of Italian scholars of mechanics born before the 2nd, or even the 1st World War (WW), who were protagonists of the scientific and technological reconstruction of Italy in the post-2nd WW time. Irrespective of the involved names, some general aspects lasting for about the whole 70s decade can be pointed out.

1. Research topics and scientists' involvement were relatively well balanced among the four areas of AIMETA, in both qualitative terms, with regard to their national as well as international recognition, and quantitative terms, as regards the number of papers appeared in the journal.
2. The presence of theoretical topics and scholars from the area of General Mechanics was definitely meaningful, greatly varied, and of the highest level.
3. Contributions in two (Solids and Machines), out of three, applied areas of AIMETA were rather varied and articulated, because of encompassing research criteria, and ensuing topics, either more methodologically oriented or more explicitly driven by the application needs of a given technological context. This distinction refers (i) in the solid mechanics area, to contributions of 'Scienza delle Costruzioni'[1] (solid and structural mechanics) versus those from 'Tecnica delle Costruzioni' (structural engineering), and (ii) in the mechanics of machines area, to contributions of 'Meccanica Applicata alle Macchine' (applied mechanics) versus those of 'Costruzione di Macchine' (machine construction). Indeed, mostly in the first part of the considered time interval, both kinds of topics were deemed to be fully consistent with AIMETA interests and activities, also due to them substantially coexisting within the academic organization of scientific disciplines in the Italian schools of engineering. The situation gradually changed over the 70s, also in connection to the newly occurred disciplinary separation of theoretical aspects of applied mechanics from the more technical ones of engineering applications. In the following years, the presence of more finalized research topics, and of communities of scientists pursuing them, within AIMETA activities decreased up to nearly disappearing, or underwent redefinitions also linked with a number of changes going on in science and technology as well as in the background society.
4. Contributions in the third applied area (Fluids) were encompassing topics from both aero/fluid-dynamics, on one hand, and hydraulics, on the other hand. In both fields, they were also distinguished according to being more theoretical-methodological or more technologically-oriented, the latter referring to issues of interest in aeronautics/aerospace/mechanics or in hydraulic constructions. However, the academic/disciplinary frameworks of aero/fluid-dynamics and hydraulics clearly reflected the distinction between the two worlds of industrial

[1] 'Scienza delle Costruzioni' is the classical name of the fundamental discipline encompassing topics of continuum mechanics, elasticity, mathematical-physics, strength of materials, and theory of structures, taught in Italy to students in the Schools of Engineering and Architecture. 'Tecnica delle Costruzioni' is the sequential discipline more technically oriented in the civil engineering realm.

engineering and civil engineering they belong to, respectively. This circumstance somehow helped keeping the two sub-areas within AIMETA also in the decades to come, up to the current days, even though other scientific associations more clearly linked with the two different technological contexts have always exerted a great attraction to them.

5. Last, but not least, it has to be noted that, overall, assigning a contribution to a definite scientific area often reflected much more the academic collocation of the scholars in the background than an actually marked difference as to the way a certain topic was addressed in terms of methodology and/or phenomenology. This was indeed a generally valuable outcome of the meaningful permeability between neighboring scientific areas, typical of former times, this being a feature which, unfortunately, has been lost in the following decades, governed by a drive towards specialization always running the risk to entail a narrower vision of the world. Luckily, in about the last decade, interest to scientific cross-disciplinarity is meaningfully increasing, again.

Until beginning of the 70s, AIMETA put apparently all his efforts in giving visibility to its international journal. Indeed, its second important scientific initiative (Appendix 2, Table 3), the establishment of a National Congress, was postponed until 1971, when its first edition was held in Udine, hosted by the International Centre of Mechanical Sciences (CISM). Over the first decade, the congress was handled by a single Committee, including a President and a Secretary. Since the sixth edition (Genova 1982), the Organizing Committee taking care of all practical aspects of the congress was paralleled by a Scientific Committee (Appendix 4, Table 5) taking care of all research aspects, as well as by a Honorary Committee, at least in some early editions. In all congresses, a few renowned foreign or Italian Key Lecturers were invited (Appendix 4, Table 6).

The 1st National Congress hosted 75 presentations, of which 12 in General Mechanics, 27 in Solid Mechanics, 15 in Mechanics of Machines, and 21 in Mechanics of Fluids (Appendix 4, Table 7). General scientific reports and summaries of presentations were published in a Special Issue of *Meccanica* [3], and represent a good starting point to dwell on scientific themes of main interest in the four areas.

- Dionigi Galletto reported on ‘Some recent results and developments in theoretical mechanics and mathematical physics’, providing a thoughtful and comprehensive overview of the most recent international advancements in mechanics of rigid bodies, continuum mechanics, mathematical theory of simple materials and mixtures of materials, plasma physics and magneto-fluid-dynamics, and relativity. The list clearly highlights the breadth of scientific interests gathered around the area of Mechanics, as per the aforementioned interpretation by Bruno Finzi.
- Michele Capurso reported on Mechanics of Solids, grouping presentations in three main sections, namely, elasticity theory, stability theory, and plasticity theory, and providing a list of international references, too.
- Andrea Capello reported on Mechanics of Machines, collecting presentations in a number of sectors, namely: vibrations; lubrication; fluidics; automatic control

theory; mechanisms; mechanics of solids and behavior of materials; methods and means of experimental investigation; automatic design and drawing.
- As regards Mechanics of Fluids, only summaries of presentations were reported.

The 2nd National Congress, Napoli 1974, is worth to be mentioned because of the decision of the AIMETA Council "to collect in a singular dedicated issue of its journal the papers which would fall within the fields of computational mechanics and applications of functional analysis to mechanics, …… two topics which, as also witnessed by a number of IUTAM Symposia, rank among the latest and more interesting essential new developments of mechanical sciences" [4]. The focus on computational mechanics via the large-size electronic calculators typical of the beginning of the 70s, towards which an explosion of interest had been developing in all areas of applied mechanics, is definitely to be underlined. Another issue of *Meccanica* [5] published the text of a round table on the stability of continuous systems, also held at the 2nd National Congress in Napoli.

Since 1974, the AIMETA National Congress was held each even year, with a sequence later shifted forward to odd years (Appendix 2, Table 3) in order to accommodate the organization in Italy of the 2nd European Solid Mechanics Conference of EUROMECH, Genova 1994.

As regards the 4th National Congress, Firenze 1978, abstracts of presentations given within the four AIMETA areas appeared in *Meccanica* [6] without a relevant general report. Thereafter, no more summaries of papers presented at National Congresses were ever published, giving up an editorial choice that, apparently, was swiftly realized to make no sense in an international journal.

Browsing through the two pillars of AIMETA, *Meccanica* issues [7] and Congress Proceedings, one can clearly observe also the substantial change of the core generation of known Italian scientists in mechanics occurred in between the 60s and the 70s, with the progressive affirmation and the scientific characterization of new research schools spreading all over the peninsula. Their prestige and role would have become even more apparent in the following decade, also in connection with a modified organization of the Italian university system in terms of formal institutions and recruitment procedures, which entailed a wider and more democratic exchange of information and knowledge also among young scientists.

3 Italian Schools of Solid and Structural Mechanics Since the Late 60s and Far Beyond

Recognized schools of solid mechanics with a core of well-identified advanced knowledge in a certain field already existed in Italy since a long time. However, looking backwards from the viewpoint of a young researcher facing at those times the nearly first steps of his scientific and academic career, they became fully apparent between the 70s and the 80s. In this respect, some main scientific fields of widespread

interest for the community of solid and structural mechanicians are to be mentioned, along with the schools that obtained more meaningful achievements.

The theory of elasticity had its core center at the University of Pisa, with Piero Villaggio's elegant and often solitary studies on a great variety of relevant topics and the capability to use it "as a chisel to create models from the complexity of reality" [8]. A though partial account of his many contributions can be found in two fundamental books. The first deals with the characterization and solution of general boundary value problem of linear elastostatics, including mean value properties and inequalities, strong formulations, energetic a priori estimates, pointwise bounds and special other topics [9]. The second offers a critical collection of various mechanical theories for modeling the behavior of structures, and is a somehow natural progression from the earlier work on the elastic solid [10]. But Villaggio also made significant contributions in many other fields, including plasticity, fracture, contact and impact, stability, optimization, masonry constructions, and history of science, with a wide culture also allowing him later to comprehensively and critically revisit decades of development and progress in solid and structural mechanics [11].

With his extraordinary capability to extract the best from students, in a really Socratic way, and despite a severe and even sometimes provocative personal attitude, Villaggio raised a first group of outstanding young scientists, who "immensely benefited from his contacts with two outstanding research groups, ….. the group of Pisan mathematicians around Guido Stampacchia and his theory of variational inequalities, …….. and the group of Clifford Truesdell and other protagonists of the revival of continuum mechanics that took place in the second half of the past century" [12]. In the years and decades to come, other brilliant scientists greatly benefited from Villaggio's ability "to awake a person's intellectual interest on a subject" even away from the specific one he was dealing with, also in connection with an "uncanny ability to spot promising new research trends". And indeed, his students were always free to make their choices, several of them later following with success quite different scientific paths, yet always keeping Villaggio's rigorous style and attitude in tackling scientific problems.

Among Villaggio's earlier disciples, at least two are mentioned for having become worldwide known scholars in continuum mechanics, finite elasticity, and mechanics of materials and structures. Gianpietro Del Piero was a rational scholar, and a teacher with a rigorous sense of justice, active in unilateral problems, structured deformations of continua [13], linear viscoelasticity, and unified modelling of material behavior, also including, in most recent times, fracture, plasticity, damage and creation of microstructure, based on incremental energy minimization. In turn, Paolo Podio Guidugli [14], still active, is recognized as the most aristocratic intellectual in the field of rational continuum physics, where he has been working, among other, on rods, plates, and shells, phase interfaces in solids, deformable ferromagnets, carbon nanotubes and graphene, continuum and statistical thermodynamics, conceptual issues in molecular dynamics, also forming a significant number of followers.

Since about the early 60s, theory of plasticity was another major research field in structural mechanics with a national program supported by the CNR, and with Italian scientists giving meaningful contributions to both theoretical advancements and their

computational implementation in engineering problems. In between the University of Firenze and the University of Roma, Giulio Ceradini fruitfully worked on limit analysis of structures as a linear programming problem (in collaboration with his authentic disciple, Carlo Gavarini), on a maximum principle in the incremental theory [15], up to the formulation of the first theorem of dynamic shake-down. His results were published in Italian journals, owed to a still restricted vision of the national, and in particular Roman, scientific environment, being summarized in an international journal only much later [16]. Yet, they paved the way to a remarkable series of results of international level, later obtained by the Italian school of plasticity involving important research groups from several other universities, also collaborating with each other.

At the Polytechnic of Milano, for a long time, Giulio Maier was extremely active on a variety of related themes, along with collaborators, suitably balancing between theoretical results and computationally oriented formulations for the elastic–plastic problem based on finite element modelling. He obtained outstanding results on the links between plasticity and mathematical programming theories [17], dynamic shakedown of hardening structures with kinematic theorem [18], incremental plastic analysis in the presence of physical instabilizing effects [19], extremum theorems for holonomic elastic–plastic problems [20], overall stability of structural systems with individual softening components, boundary elements and their symmetric Galerkin version [21, 22]. Maier established fruitful early connections with the top-level international groups of William Prager, Daniel Drucker and Paul Symonds at Brown University, Providence, but also with scholars from University of Illinois at Urbana-Champaign, University of Minnesota, Faculté Polytechnique de Mons, and University of Cambridge. However, along with young collaborators, he has contributed significantly also to optimum design and structural optimization, parameter identification in elastoplasticity based on mathematical programming and Kalman filter techniques, statistically loaded structures, crack-propagation analysis, cohesive crack models, and structural dynamics.

Editor of *Meccanica* (1982–85) and President of AIMETA (1986–89), Maier was awarded a huge number of prestigious Italian and international prizes, which highlighted his large recognition in different scientific fields. Based also on many other links, he constantly feeded excellent scholars working on a variety of themes, ranging from finite elements, heterogeneous materials, and fracture processes, up to inverse problems, structural diagnosis, and micro-electro-mechanical-systems. All of this has qualified Maier and his varied research group, for decades, as the center of reference for advanced research in structural mechanics in Italy, as also internationally witnessed by his still being a Member-at-Large of the IUTAM General Assembly (see Appendix 9 forward).

The Italian school of plasticity was represented significantly in other academic institutions, too, in a context of transversal intellectual commonality and also personal friendships. At the University of Bologna, Michele Capurso contributed meaningful results on the extremum characterization of incremental elastic–plastic solutions [23], on rigid-plastic dynamic responses, and on upper bounds on values attained by history-dependent quantities after shakedown of elastic–plastic structures under

cyclic loads [24], also in the presence of fractured materials [25]. Sadly, he passed away prematurely, at the very height of his scientific maturity. In turn, at the University of Palermo, Castrenze Polizzotto, who also nourished younger scholars and is still active at a ripe old age, obtained valuable results on a variety of topics in plasticity. They include shakedown within dynamics [26] and damage mechanics, related bounding techniques of plastic deformations [27], steady state response of structures under cyclic thermo-mechanical loads, strain gradient plasticity theory [28], elastic–plastic, limit and shakedown analysis by the symmetric BEM [22].

Stability, structural dynamics, and engineering applications of elasticity were worthily addressed at the University of Genova in Riccardo Baldacci's school. In the years to come, his two main disciples, Edoardo Benvenuto and Alfredo Corsanego, would have become a scholar of international reference in the history of structural mechanics [29], and a scientist of national reference as to the seismic risk and vulnerability assessment of buildings and territorial systems, respectively. Both paid a main care to the conservation and safety of Italy's architectural and monumental heritage, according to a more conceptual or more practically-oriented perspective. Actually, the early Italian center for earthquake engineering was Giuseppe Grandori's school at the Polytechnic of Milano, with his disciple Vincenzo Petrini later playing an important role, along with Carlo Gavarini from the University of Roma La Sapienza, in the methodological and organizational definition of technical procedures for effectively handling seismic and post-seismic emergencies.

In the even more applied context of structural engineering, two early meaningful schools grown up in the academic environment of solid mechanics are to be mentioned: Franco Levi's school on reinforced concrete structures at the Polytechnic of Torino, and the school on steel structures established at the Polytechnic of Milano by Leo Finzi, who was one of the eight founders of AIMETA.

Finally, at the University of Napoli, just after the establishment of AIMETA, there was the academic separation of the engineering-oriented group around another AIMETA founder, Elio Giangreco, widely active on theory of structures, from the group of Vincenzo Franciosi, active on more fundamental topics of solid and structural mechanics. In this more pertinent context, the school of the latter has to be mentioned, too, for the variety of its interests and for the capability to train a group of smart young scientists, who would have later contributed significantly to both theoretical and more technical aspects.

Scientific results obtained within all these schools were always presented at AIMETA national congresses and were often also published in *Meccanica*, especially in its early years when almost only the pertinent schools' 'fathers' were involved.

4 80s, 90s and Beyond: The Time of AIMETA Consolidation

Over the 70s, AIMETA congresses were attended by a meaningful and increasing, yet still relatively limited, number of presenting scholars (Appendix 4, Table 7), coming mostly—though obviously not only—from the communities around the many different and well-recognized protagonists of the long post-2nd WW revival of mechanics in Italy. Roughly speaking, the following two decades may be considered the time of the definitive affirmation of AIMETA congresses as the reference biennial event for the exchange of scientific knowledge within a community which was undergoing an important quantitative growth and a meaningful generation change, with young professors born at about the 2nd WW time or just after it coming significantly into play. In this respect, a non-trivial role was also played by the reorganization of university institutions and recruitment procedures occurred at the beginning of the 80s, and by the explosion of scientific mobility at both international and national level.

While in the 70s contributions were relatively well balanced among the four areas of AIMETA in numerical terms, over the 80s changes in the composition of congresses' attendees started to occur. Participation from the solid mechanics area strongly increased, with also a differentiation between contributions more clearly focused on fundamental aspects of mechanics of solids and materials, and contributions paying attention also, or mostly, to phenomenological aspects of the structural response. Since Genova 1982, this differentiation reflected in the formal grouping of the two kinds of contributions under distinct headings ('mechanics of solids' and 'mechanics of structures') in both the congresses' programs and the relevant proceedings. This distinction was sometimes questionable from the scientific viewpoint. Anyway, the increased attendance from mechanics of solids and structures, further enhanced in the decades to come, entailed an increase from four to five in the nominal number of areas' representatives in the AIMETA Executive Council (Appendix 3), and in other formal initiatives (e.g., the number of AIMETA Junior Prizes, see Appendix 7 forward) later undertaken by the AIMETA governing boards.

On the other hand, starting with the 80s, attendance of scientists from the other AIMETA areas slightly decreased (certainly in percentage), although with variable and oscillating trends over the decades. From about the 90s, this occurred in particular as regards general mechanics, also somehow in connection with a progressive reduction in the presence and role of the related disciplines (typically, Rational Mechanics) in the teaching curricula of Italian schools of engineering. This trend further increased around the turn of the millennium, with the transition in the organization of the relevant studies from the early, successful and worldwide recognized, 5-year system to the 3 + 2 system, which substantially deprived the mechanical disciplines of their most important theoretical fundamentals, irrespective of some possible (though anyway doubtful) merits occurring in other engineering areas. Scholars of theoretical mechanics increasingly considered their topics better centered in scientific

events organized by associations like the National Group for Mathematical Physics (GNFM) or the Italian Society of Applied and Industrial Mathematics (SIMAI).

A certain reduction of centrality of AIMETA congresses with respect to topics in the areas of mechanics of machines and mechanics of fluids was perceived in the relevant communities, too, although to a definitely minor extent. As to the former, after a non-trivial increase of attendance occurred in the first decade of the new millennium, a somehow uncertain attitude towards AIMETA of scientists active in more technologically-oriented fields, like machine construction and design, has to be mentioned, even though a meaningful core of applied mechanicians always feel themselves fully at home within AIMETA. Actually, this evolution should also be related to a general widening of scientific perspectives and topics of interest (e.g., micro/nanomechanics and biomechanics) occurred mostly in the new millennium, and also reflected in a modified organization of the AIMETA congress with a progressive transition to a symposia-based scheme (Appendix 4, Table 8).

As regards fluid mechanics, the 80s and 90s marked a kind of bifurcation between excellent scientists from mechanical university environments constantly considering themselves, and their topics, well centered within AIMETA activities/events, and scientists from aeronautical environments more explicitly attracted by other conference series, e.g. the one organized by the Italian Association of Aeronautics and Astronautics (AIDAA). Anyway, fluid topics and people from qualified hydraulic environments of civil engineering have always been well represented in AIMETA.

All of the above issues are concerned with the presence of the different scientific areas in the AIMETA congresses. Somehow surprisingly, the situation was quite different as regards the AIMETA journal. Indeed, therein, over both the 80s and the 90s, quantitative contributions from Italian scholars in solid and structural mechanics were only comparable to, if not even lower than, those from each one of the other three areas. In particular, the 'new' generation of mid-age scientists in the former area often preferred to submit their works to other international journals, with either a longer and better established tradition or a more clear focus in a given, and often 'novel', scientific field. An undue and obviously undeclared, yet underlying, need of verifying the quality of personal and Italian research at an 'actually' international level certainly played a role. However, other circumstances were also important, namely *Meccanica* being a journal (i) published by an Italian company (until 1990), (ii) with a too general scope (possibly not at the highest level, according to some perception) in mechanics, and (iii) with a board of solely Italian Associate Editors (until March 1991). Why this mostly occurred in the area of solid and structural mechanics and lasted in the 90s, too, when the number of contributions to *Meccanica* by highly qualified foreign scientists just from that area started to meaningfully increase, is a matter left to the thoughts of science historians.

In the 90s, the limitations for the journal success associated with the above three points were addressed in an editorial by Giuliano Augusti. He observed that the "*Meccanica* birth-mark ……. of publishing in English the most important Italian contributions to Mechanics", even with the non-acceptance of a paper "unless written by an Italian author or developed with some connection with the world of Italian Mechanics", had been overcome only a few years before [30]. Indeed, the search

for "an Editor willing (and able) to solicit papers from non-Italian scientists", and the transition to an actually international publisher (Kluwer Academic) guaranteeing a wider circulation occurred in 1991. Over the 90s, papers by qualified non-Italian authors were around half the total number, or more.

As to the very broad scope of the Journal, already considered "a rare occasion for the productive encounter, exchange and cross-fertilization of ideas in a time of exasperated specialization in the publishing world" [1], Augusti claimed that in a time of "so many specialized journals on the market, a general mechanics journal has its scientific reasons and its viable space". Later, the matter was addressed by other Editors of *Meccanica.* They pointed out that the focus of the journal is on "sharing the common methodological framework of all scientists working in whatever field of mechanics, and on highlighting phenomenology and application aspects occurring in modern mechanical problems" [31], while also noting that, due to the variety of papers, "balancing theoretical and more application-oriented works is an important item for a journal which likely, in the past, gave major emphasis to the former" [32]. Overall, the choice to maintain the general and interdisciplinary character of the journal was confirmed, however strengthening measures to favorably account for the ever increasing, and likely irreversible, trend towards specialization. Among them, special issues built around a clearly identified topic, and often devoted to novel research lines, with also the involvement of foreign guest editors of high-quality, are to be mentioned (Appendix 5). Indeed, since about the end of the 90s, they have increasingly appeared in *Meccanica*, up to becoming a substantially regular and appealing ingredient of the journal in the last decade, as it has occurred for other high-quality journals.

After all, the trend towards explicitly identifying specific topics of interest for the community and grouping expert scientists around them—which is at one time a cause and an effect of specialization—had become apparent also in other AIMETA activities. Indeed, since about mid-80s, a third pillar was established in the basket of AIMETA activities, i.e. the so-called AIMETA Groups steadily devoted to a given subfield of mechanics and aimed at connecting the involved scientists through specifically dedicated conferences, with also features of transversality among the different areas (Appendix 6). The early Groups (Computational Mechanics, Theory of Machines and Mechanisms, Stochastic Mechanics, Mechanics of Materials and Structures, Tribology) were progressively paralleled/replaced by new/renamed ones (Mechanics of Materials, Biomechanics, Continuum Mechanics, Turbulence, Kinematics and Dynamics of Multibody Systems, Dynamics and Stability), with also further articulations and changes introduced to better characterize the fields of interest. Data and information on some main initiatives undertaken by the currently active Groups are listed in Appendix 6 (Tables 10, 11, 12, 13, 14, 15, and 16).

Focusing on the area of solid and structural mechanics, it is worth compiling a gross list of core fundamental fields steadily pursued in the 80s and 90s, and extending to the beginning of the new millennium, too. Non-exhaustive lists of academic institutions where the related topics have been best practiced, with also international recognition, are also mentioned, however with no names of involved

scientists being provided, due to the lack of an adequate historical perspective and a matter of opportunity.

- Computational mechanics (Pavia, Polytechnic of Milano, Padova, Cosenza, Brescia, …….)
- Continuum mechanics, finite elasticity and plasticity (Pisa, Roma Tor Vergata, Ferrara, Udine, Bologna, Parma, Trento, Napoli Federico II, Polytechnic of Milano, Palermo, Bari, …….)
- Dynamics, stability, bifurcation, chaos, and their control (Genova, Firenze, L'Aquila, Roma La Sapienza, Polytechnic of Marche, Palermo, Messina, …..)
- Inverse problems and identification (Polytechnic of Milano, Roma La Sapienza, Udine, …..)
- Mechanics of materials, damage and fracture (Polytechnic of Torino, Polytechnic of Milano, Genova, Bologna, Padova, Trento, Napoli Federico II, Cassino, ……..)
- Modern and historical structures: modeling, analysis, response (all universities/polytechnics)
- Stochastic mechanics, probability, wind and earthquake engineering (Pavia, Palermo, Messina, Genova, Roma La Sapienza, L'Aquila, Napoli Federico II, Firenze, …….)

As to *Meccanica*, it is also worth mentioning its somehow peculiar nature of a journal well founded in the Italian tradition of mechanics, on one hand, and opened to a wide vision of the evolution of science, on the other hand, by shortly dwelling on two related items. The first item is concerned with the attention worthily paid also to some historical aspects of the evolution of mechanics, mostly (though not only) in the national context. This is witnessed by a number of articles appeared in both earlier and recent times on the Italian contribution to mechanics [33], or about general and specific achievements of Italian scientists of earlier centuries in both the mathematical and the engineering environment [34–40]. A general care to the evolution of mechanics in the international context has also to be noticed (see, e.g., [11, 41, 42]). The second item is consistent with the wide scope of the journal in general cultural terms, and refers to the publication of papers, written by well-known mechanicians, dwelling on criteria, features and trends of research, with also critical and warning considerations [43–45].

5 The New Millennium: Widening of Scientific Perspectives, Further Generation Change, and New AIMETA Initiatives

Due to the great acceleration of technological transformations in the XIX and, mostly, XX century, changes in whatever realm of life (cultural, economic, social) have been increasingly characterized by changes of paradigm under the sign of innovation.

This has also happened in science where, however, remarkable features of continuity can also be recognized. In particular, at about the turn of the millennium, a number of meaningful technological changes entailed a non-trivial redefinition of the fields of scientific interest in applied mechanics, making trends already existing in the previous few decades fully apparent and, mostly, ubiquitous. At the same time, a new generation of scientists came to the fore.

Of course, classical scientific fields did persist, along with the relevant themes. However, their characters of unity and internal coherence began to be overlooked in favor of the explicit identification of specific sub-themes, according to a trend ever increasing towards particularization and specialization. At the same time, another, and seemingly opposite, trend became apparent: the need to overcome traditional boundaries between scientific areas and to hybridize the relevant themes, by virtue of an increasingly recognized transversality of methods and technological scales, and cross-correlation between theoretical/physical contexts and the associated phenomena. This being a circumstance already experienced in the realm of physical sciences, and transferred to the engineering realm with a physiological time delay.

As regards AIMETA congresses, since about beginning of the new millennium papers accepted for presentation in a given area, out of the five constituent ones, were grouped a posteriori around a main characterizing theme/subject. Alternatively, although in the same spirit, the selection of well identified scientific fields and of a number of expert scholars suitable to meaningfully and possibly comprehensively deal with them, led to the a priori organization of Special Sessions and/or Minisymposia in the programs of congresses (Appendix 4, Table 8). In this regard, attention was also paid to their possible transversality with respect to AIMETA areas, mostly in more recent times, as per the cross-disciplinary nature and scope of the Association.

In turn, *Meccanica* published more and more studies in interdisciplinary fields at the border between different areas of mechanics, such as fluid–solid interaction, acoustic–structural coupling, and thermomechanics, or between mechanics and other mathematical and engineering sciences, including control, advanced materials, dynamical systems, computation, electromechanics, and biomechanics [46]. New challenges concerned with the interaction between mechanics and chemical reactions, and biological signal transmissions were considered of interest for the journal, too [47].

In the international perspective, the list of 'novel' fields of interest to the community, with the underlying research themes, could be built by looking at the articulation of the AIMETA activities, as made explicit through the congresses, the journal organization and publications, and the groups. Indeed, browsing through the lists of (i) key lectures delivered at national congresses, (ii) relevant subgroups of papers, special sessions and minisymposia, (iii) special issues of *Meccanica*, and (iv) formally established AIMETA groups, as reported in Appendices 4–6, helps getting an overall view of the scientific topics of interest in a given area and in a certain period of time. Moreover, looking at the numbers of involved people gives an idea of the most frequented of those topics. Overall, the relative qualitative and quantitative evolutions over the last two decades can be better monitored than for previous decades, this being in the

writer's opinion the maximum effort that can be made in order to get a comprehensive and comparative view of what has been going on with the matter up to now.

Focusing again on the area of solid and structural mechanics, the generation of scholars born during the 2nd WW or just after it is now smoothly coming to its term, upon having been active for about 40 years or more. The new generation, which started replacing it since about the beginning of the new millennium, is obviously more prepared to catch the new signs of the times. The core research fields listed in Sect. 4 were still practiced with continuity, yet introducing proper relevant redefinitions and complementing them with fully 'novel' research topics, either more specialized (even when dealing with fundamentals) in accordance with the objectives and purposes of an underlying scientific/technological environment, or more transversal to different areas of mechanics and beyond them. A partially updated rough list of novel/redefined macro-fields can be given as follows:

- Advanced computational mechanics, also including parallelizable algorithms
- Biomechanics
- Exploiting nonlinearity in mechanics: analysis, geometry, computation, engineering design
- Modeling, analysis and phenomenology at different space and time scales, with emphasis on micro/nano-systems and multifunctional structures
- Multifield complex and/or architected materials, mechanical metamaterials
- Multiphysics problems
- New/hybridized topics beyond mechanics, including artificial neural network, additive manufacturing, renewable energy systems, probabilistic data-driven models, machine learning-based methods, uncertainty quantification issues, ……
- Nonlinear dynamics, bifurcation, chaos, synchronization, wave propagation, localization, control
- Nonlinear identification, structural health monitoring, energy harvesting
- Reduced order modelling.

Here, no academic institutions are mentioned. This is also due to the definitive affirmation of a couple of newly established research paradigms. On one hand, the increased collaboration between people from groups based at different (and often also international) institutions, made possible by the improvements of tools for virtual meetings, and then brought to its extreme consequences in the Covid-pandemic time. On the other hand, the enhanced cross-disciplinary nature of the 'novel' fields, with collaborations being established between people belonging to completely distinct academic groups. All of this has somehow reduced the possibility to unequivocally identify schools of reference geographically localized, while enhancing the role played by single scientists in the framework of trans-institutional and/or cross-disciplinary collaborations.

In the mood for a better dissemination, characterization, and possible reward of scientific research, changes occurred also in the two main activities of AIMETA,

since about the beginning of the new millennium, along with some later new initiatives. Upon moving to the Springer publishing company (since 2002), whose professionalism was crucial to the definitive success of the journal, *Meccanica* gradually increased the number of issues per year up to twelve, in order to face the meaningful growth of good papers authored by foreign scientists from both advanced and 'emerging' countries in all over the world. The number of special issues devoted to specific research topics and possibly edited also by solely foreign internationally recognized scholars markedly grew, too, up to making them nearly periodic. Currently, nearly two thirds of the Associate Editors of the journal are renowned foreign scientists from all over the world, with full responsibility of managing, in their field of expertise, the review process of each submission, on invitation of the Editor in Chief. Papers by foreign scientists have become the vast majority. AIMETA 'fathers' and some following generations of Italian scholars of mechanics would likely complain the fully pursued internationalization of the journal, which certainly deprives it of its Italian 'identity', even though some senior and cultured foreign scholars are still able to catch it. This is the case of, e.g., the renowned ones having relationships with the Italian academy, through scientific collaboration with AIMETA or other Italian mechanicians, who were invited to celebrate the 50th Anniversary of *Meccanica* with papers published in a meaningful, dedicated special issue [48]. Moreover, it can likely be caught, behind the standard international appearance, also in some lasting features of the journal, as the mentioned care to historical aspects of mechanical sciences and to 'societal' effects of scientific research. The above is of course a general price to pay to globalization, whose effects in terms of journal visibility in the worldwide community of theoretical and applied mechanicians, which include a possibly high journal ranking, have become definitely important, irrespective of the inflated value certainly given to this kind of classifications.

In turn, as already mentioned, scientific programs of AIMETA congresses paid increasing attention to the apparent specification of research fields, up to being organized nearly only as a collection of large minisymposia, possibly, but not necessarily, reflecting researches being conducted in the framework of AIMETA Groups. One more relevant aspect to be mentioned is the frequently resumed discussion, in the new millennium, about the possible transformation of AIMETA congresses in international events, as per, e.g., the German GAMM (Gesellschaft für Angewandte Mathematik und Mechanik) scheme. However, while participants were asked to write contributions for the congress proceedings in English, it was finally agreed that the community of Italian mechanics is already large enough and qualified to guarantee a biennial meeting of the underlying communities with a satisfactory exchange of advanced knowledge and information, also by virtue of their anyway active involvement in other, and even possibly too many, international events. Mostly, AIMETA congresses represent the ideal place to meet periodically varied people from the rich Italian community of mechanics, and to become acquainted with new generations of scientists.

Two important new initiatives undertaken in the new millennium should also be noted. The first is the establishment (2009) of AIMETA Junior Prizes awarded by a dedicated committee any two years, on the occasion of the national congress,

to the best young researcher in each one of the five constituent areas of the association (Appendix 7). This new initiative has been widely appreciated by young scientists, with the submission of a good number of excellent nominations. This occurred notwithstanding a traditional allergy of Italian people towards individual recognitions, differently from other countries, which is likely a somehow improper byproduct of the affirmation of even too many individual entities at all (i.e., personal and institutional) levels in the long history of our country. Along the same line, Awards for best PhD Theses have been established by several AIMETA Groups (Appendix 6).

The second initiative is concerned with the organization of a summer school for PhD students and post-doc researchers on a variable topic, which, after some earlier attempts, has been eventually realized via a formal agreement with the International Centre for Mechanical Sciences, through a CISM-AIMETA Advanced School being held in Udine every year (Appendix 8).

Links of AIMETA with international associations in the area of mechanics are also to be noted, starting with the meaningful presence of Italian mechanics in the IUTAM activities. Notwithstanding the chronical low care paid by the Italian governments to the needs of scientific research, Italy is one of the few countries (along with Canada, France, Germany, Japan, Russia and UK) having since long times four representatives in the IUTAM General Assembly (with only China and USA having more) (Appendix 9). Three of them are designated by the AIMETA and one by the National Research Council. Italian scholars are also meaningfully present within IUTAM Committees (Congress Committee, Fluid and Solid Symposia Panels), and as invited organizers/lecturers at both the International Congress of Theoretical and Applied Mechanics (ICTAM)—which is the biggest scientific event in the area of mechanical sciences held every four years—, and in the IUTAM Symposia held every year on different subjects. As a general recognition of the overall quality of Italian mechanics, the 25th ICTAM (originally planned in Milano for 2020) has been held successfully online in 2021, due to the pandemic issue, under the organization of the solid and structural mechanics group of the Polytechnic, and the meaningful support of AIMETA and the whole Italian community.

Links with other associations include the European Mechanics Society (EUROMECH), via a long lasting affiliation (since 1995), the International Association of Computational Mechanics (IACM), the European Community on Computational Methods in Applied Sciences (ECCOMAS), which the AIMETA Group of Computational Mechanics is the Italian member of, and more recently with the Chinese Society of Theoretical and Applied Mechanics (CSTAM).

6 Conclusions, with an Overlook to the Future

In this paper, the evolution of theoretical and applied mechanics in Italy has been overviewed, as observed from the perspective of its national association AIMETA, after fifty plus years from its foundation. While being articulated in five constituent

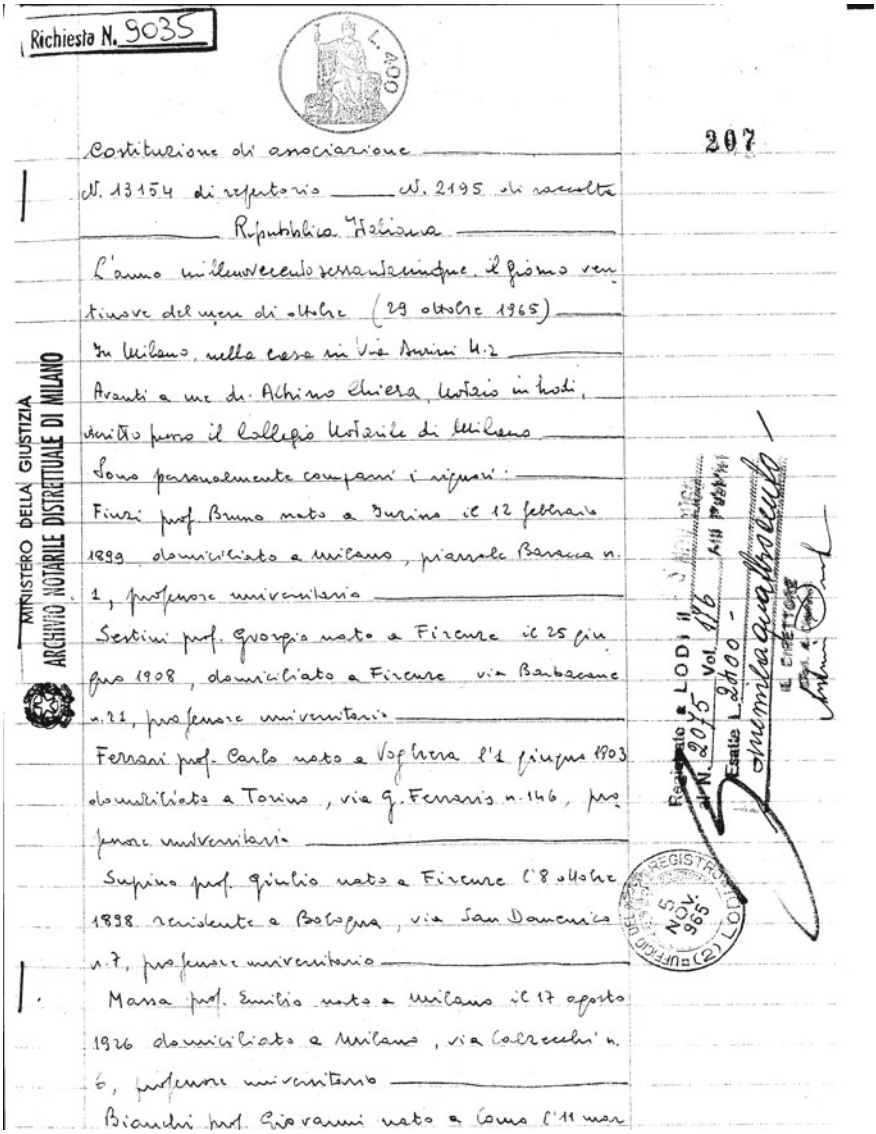
scientific areas (general mechanics, solids, structures, fluids, machines) since about its foundation, the various AIMETA activities have been developed over the decades within a substantially unitary framework, this being definitely a worth feature as regards the organization of mechanical sciences in Italy. Qualitative and quantitative evolution of the Association and of its two long-lasting activities—the international journal *Meccanica* and the National Congress –, besides the most recent ones, has been retraced in detail, by also referring to the seemingly whole set of carefully reconstructed data and information collected in the Appendices. It has been possible to get an overview of the main research themes addressed within the five component areas over fifty plus years, and of some relevant involved scientists, with also a focus on what has been going on in the specific area of solid and structural mechanics where the writer has been active for more than forty years. Overall, the fundamental role played by AIMETA in monitoring the evolution of theoretical and applied mechanics in Italy, and in somehow orientering and fostering the research of the underlying communities has clearly emerged.

AIMETA is obviously expected to be the Association of reference for mechanical sciences in Italy also in the decades to come. However, since about the turn of the millennium, the role of mechanics within the whole basket of mathematical and engineering sciences has non-trivially evolved. In his foreword appeared in the first issue of *Meccanica* (1971), the first AIMETA President, Bruno Finzi, referred to Mechanics as the "most ample science, multiform, in unceasing, bewildering development; the 'Paradise of the mathematical sciences', as Leonardo said, and the cornerstone of every physical science too, which informs our present-day civilization to such an extent that it has well been said that we are living in the Age of Mechanics" [2]. Now, the situation is definitely different.

Within the current context of mathematical and engineering sciences, mechanical ones can be considered to have reached a plateau, if not even a turning point, of their glorious and long-lasting parabola of growth, though still having in front of them rich perspectives in terms of further renovation and, mostly, of hybridization and cross-fertilization with other sciences. Of course, this will somehow affect also the identity, the scope and the activities of the associations of reference at both the international level (IUTAM) and the national ones (AIMETA and equivalent foreign associations). To what extent, in which directions, and in how much time this will occur is left to the vision and the practice of the follow-up generations of scholars of Mechanics.

Acknowledgements Data and information reported in the Appendices have been collected with the help of several colleagues and friends. Hoping to not forget anyone, specific thanks are due to Professors C. Alessandri, F. Angotti, A. Carini, M. Carricato, C.M. Casciola, C. Cinquini, L. Contraffatto, L. Corradi Dell'Acqua, S. De Miranda, D. De Tommasi, L. Gambarotta, A. Greco, S. Lenci, P.M. Mariano, A. Morro, E. Pennestrì, A.Pirrotta, U. Perego, R. Sburlati, A. Sollazzo. Many thanks are due to Dr. M.J. Crowley, Head of the Library of the Department of Structural and Geotechnical Engineering, Sapienza University of Rome, for finding indexes of a meaningful number of older AIMETA Congresses. Finally, the substantial support provided by Dr. V. Settimi in carefully organizing all tables is gratefully acknowledged.

Appendix 1: Early Notarial Deed of Constitution



Richiesta N. 9035

MINISTERO DELLA GIUSTIZIA
ARCHIVIO NOTARILE DISTRETTUALE DI MILANO

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Costituzione di associazione
N. 13154 di repertorio — N. 2195 di raccolta
Repubblica Italiana
L'anno millenovecentosessantacinque, il giorno ventinove del mese di ottobre (29 ottobre 1965)
in Milano, nella casa in via Durini n. 2
Avanti a me dr. Achino Chiera, notaio in Lodi, iscritto presso il Collegio Notarile di Milano
sono personalmente comparsi i signori:
Finzi prof. Bruno nato a Torino il 12 febbraio 1899, domiciliato a Milano, piazzale Baracca n. 1, professore universitario
Sestini prof. Giorgio nato a Firenze il 25 giugno 1908, domiciliato a Firenze via Barbacane n. 21, professore universitario
Ferrari prof. Carlo nato a Voghera l'1 giugno 1903 domiciliato a Torino, via G. Ferraris n. 146, professore universitario
Supino prof. Giulio nato a Firenze l'8 ottobre 1898 residente a Bologna, via San Domenico n. 7, professore universitario
Massa prof. Emilio nato a Milano il 17 agosto 1926 domiciliato a Milano, via Colleoni n. 6, professore universitario
Biandri prof. Giovanni nato a Como l'11 mar

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... 1924 domiciliato a Milano, via Ampere n. 47, professore universitario

Finzi prof. Leo nato a Milano il 24 settembre 1924 domiciliato a Milano, viale Gandhi n. 10, professore universitario

Giangreco prof. Elio nato a Parenzo il 6 ottobre 1924 domiciliato a Napoli via Tasso n. 480, professore universitario

Persone aventi cittadinanza italiana e della cui identità sono io notaio certo, che rinunciano - d'accordo fra loro e col mio consenso - all'assistenza dei testimoni al presente atto col quale dichiarano di voler costituire, come col presente atto costituiscono una associazione denominata: "Associazione Italiana di Meccanica Teorica ed Applicata" (A.I.M.E.T.A.), con sede legale in Milano, Piazza Leonardo da Vinci n. 32, sulla quale i comparenti qui mi citano sono e da me letto ai comparenti, viene allegato sotto A al presente atto quale sua parte integrante e sostanziale.

Il Signor Finzi prof. Bruno

viene dai comparenti unanimemente designato a rappresentare legalmente la Associazione fino alla elezione delle cariche sociali previste dallo

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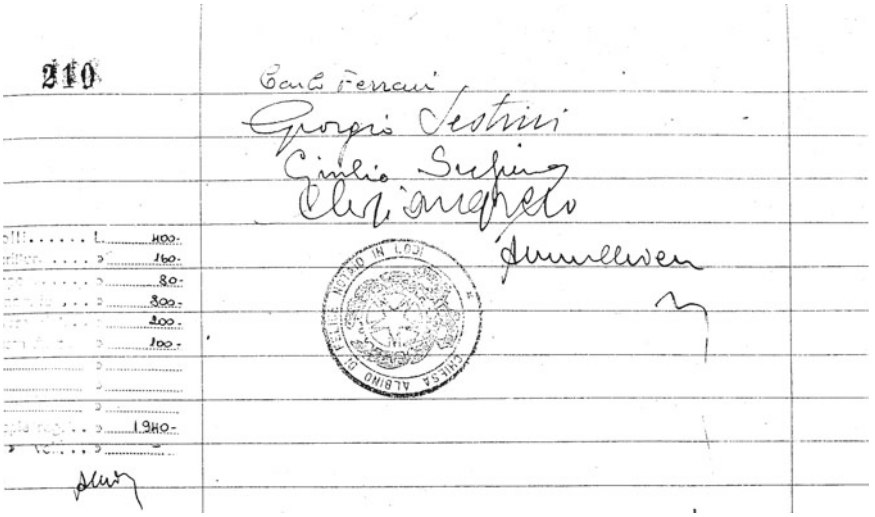
Statuto elezione da avere luogo nella prima
assemblea dei soci da venire convocata a cura
del predetto Signore.
La prima Assemblea dei soci provvederà pure
a determinare l'ammontare del contributo an-
nuo.
Il nominando Presidente viene fin d'ora autorizz-
zato a compiere le pratiche necessarie per il consc-
guimento del riconoscimento dell'Associazione e
per l'acquisto della personalità giuridica e viene
facoltizzato ad apportare allo Statuto le modifi-
che richieste dalle competenti autorità.
Ri-
chiesto io notaio ho ricevuto il presente atto
che ho letto, in unione con l'annesso allegato,
ai comparenti i quali lo approvano e con-
me lo sottoscrivono.
Costa
quest'atto di un foglio scritto da me e da mia
mia figlia per due facciate intere e righe ven-
tuno di questa terza.
Bruno Finzi.
Cesare
Aurelio Nanni
Giovanni Bianchi



Appendix 2: AIMETA Main People

See Tables 1, 2, 3.

Table 1 AIMETA Founders and Presidents

AIMETA Founders (1965)	AIMETA Presidents	
Name	Years	President
Giovanni Bianchi	1966–1969	Bruno Finzi
Carlo Ferrari	1970–1973	Giulio Supino
Bruno Finzi	1974–1977	Carlo Ferrari
Leo Finzi	1978–1981	Giorgio Sestini
Elio Giangreco	1982–1985	Giovanni Bianchi
Emilio Massa	1986–1989	Giulio Maier
Giorgio Sestini	1990–1993	Carlo Cercignani
Giulio Supino	1994–1997	Enrico Marchi
	1998–2001	Gianfranco Capriz
	2002–2005	Angelo Morro
	2006–2009	Giuseppe Rega
	2010–2013	Carlo Cinquini
	2014–2017	Paolo Luchini
	2018–2021	Stefano Lenci
	2022–2025	Walter D'Ambrogio

Table 2 Editors of *Meccanica*

Years	Editor
1966–1981	Emilio Massa and Giovanni Bianchi
1982–1985	Giulio Maier
1986–1989	Carlo Cercignani
1990–1997	Giuliano Augusti
1998–2003	Giuseppe Rega
2004–2011	Vincenzo Parenti Castelli
2012–2014	Alberto Carpinteri
2015–2020	Luigi Gambarotta
2021-	Anna Pandolfi

Table 3 Congress Chairs

Congress	Congress Committee
I Udine 1971	Luigi Sobrero
II Napoli 1974	Rodolfo Monti, Luigi G. Napolitano
III Cagliari 1976	Giuseppe Aymerich
IV Firenze 1978	Giuliano Augusti
V Palermo 1980	Nicola Alberti

Congress	Organizing Committee	Scientific Committee
VI Genova 1982	Giovanni Bianchi	Riccardo Baldacci
VII Trieste 1984	Fulvio Di Marino	Giuseppe Grioli
VIII Torino 1986	Bruno Piombo	Ario Romiti, Dionigi Galletto
IX Bari 1988	Antonio Trentadue	Alfredo Sollazzo
X Pisa 1990	Roberto Bassani	Marino Marini
XI Trento 1992	Roberto Contro	Luigi Salvadori
XII Napoli 1995	Luciano Nunziante	?
XIII Siena 1997	Paolo Toni	Piero Villaggio
XIV Como 1999	Alberto Fontana	Roberto Contro
XV Taormina 2001	Francesco Petrone	Giuliano Augusti
XVI Ferrara 2003	Claudio Alessandri	Giannantonio Sacchi Landriani
XVII Firenze 2005	Claudio Borri	Mario Primicerio
XVIII Brescia 2007	Angelo Carini	Renzo Piva
XIX Ancona 2009	Stefano Lenci	Paolo Podio Guidugli
XX Bologna 2011	Francesco Ubertini	Antonio Tralli
XXI Torino 2013	Giuseppe Lacidogna	Alberto Carpinteri
XXII Genova 2015	Luigi Gambarotta	Angelo Morro
XXIII Salerno 2017	Fernando Fraternali	Antonio Tralli
XXIV Roma 2019	Achille Paolone, Antonio Carcaterra	Giorgio Graziani
XXV Palermo 2022	Mario Di Paola, Fabrizio Micari	Giuseppe Rega

Appendix 3: AIMETA Executive Council

See Table 4.

Table 4 Executive Council

Year	Member	Affiliation	Role	Area
1966–1969	Bruno Finzi	Polytechnic of Milano	President	General Mechanics
	Carlo Ferrari	Polytechnic of Torino		Fluids
	Leo Finzi	Polytechnic of Milano		Solids and Structures
	Elio Giangreco	University of Napoli		Solids and Structures
	Emilio Massa	Polytechnic of Milano		Machines
	Giorgio Sestini	University of Firenze		General Mechanics
	Giulio Supino	University of Bologna		Fluids
	Giovanni Bianchi	Polytechnic of Milano	Secretary	Machines
1970–1973	Giulio Supino	University of Bologna	President	Fluids
	Carlo Ferrari	Polytechnic of Torino		Fluids
	Bruno Finzi	Polytechnic of Milano		General Mechanics
	Leo Finzi (?)	Polytechnic of Milano		Solids and Structures
	Elio Giangreco (?)	University of Napoli		Solids and Structures
	Giorgio Sestini	University of Firenze		General Mechanics
	?	?		?
	Giovanni Bianchi	Polytechnic of Milano	Secretary	Machines
1974–1977	Carlo Ferrari	Polytechnic of Torino	President	Fluids
	Carlo Cattaneo	University of Roma La Sapienza		General Mechanics
	Mario Como	University of Napoli		Solids and Structures
	Lucio Lazzarino	University of Pisa		Machines
	Giulio Maier	Polytechnic of Milano		Solids and Structures
	Giorgio Sestini	University of Firenze		General Mechanics
	Giulio Supino	University of Bologna		Fluids
	Giovanni Bianchi	Polytechnic of Milano	Secretary	Machines
1978–1981	Giorgio Sestini	University of Firenze	President	General Mechanics
	Giuliano Augusti	University of Firenze		Solids and Structures
	Carlo Cercignani	Polytechnic of Milano		General Mechanics
	Carlo Ferrari	Polytechnic of Torino		Fluids
	Ettore Funaioli	University of Bologna		Machines
	Giulio Maier	Polytechnic of Milano		Solids and Structures
	Luigi G. Napolitano	University of Napoli		Fluids

(continued)

Table 4 (continued)

Year	Member	Affiliation	Role	Area
	Giovanni Bianchi	Polytechnic of Milano	Secretary	Machines
1982–1985	Giovanni Bianchi	Polytechnic of Milano	President	Machines
	Enrico Marchi	University of Genova	Vice-President	Fluids
	Carlo Cercignani	Polytechnic of Milano	Secretary	General Mechanics
	Luciano De Socio	University of Roma La Sapienza	Treasurer	Fluids
	since September 1983 replaced by			
	Giuseppe Grioli	University of Padova		General Mechanics
	Giulio Maier	Polytechnic of Milano		Solids and Structures
	since September 1983 replaced by			
	Piero Villaggio	University of Pisa	Treasurer	Solids and Structures
	Silvio Nocilla	Polytechnic of Torino		General Mechanics
	Giorgio Sestini	University of Firenze		General Mechanics
1986–1989	Giulio Maier	Polytechnic of Milano	President	Solids and Structures
	Enrico Marchi	University of Genova	Vice-President	Fluids
	Pietro Caparrini	University of Firenze	Treasurer	Machines
	since September 1986 replaced by			
	Tristano Manacorda	University of Pisa	Treasurer	General Mechanics
	Giovanni Bianchi	Polytechnic of Milano		Machines
	Carlo Cercignani	Polytechnic of Milano		General Mechanics
	Giuseppe Grioli	University of Padova		General Mechanics
	Piero Villaggio	University of Pisa		Solids and Structures
	Leone Corradi	Polytechnic of Milano	Secretary	Solids and Structures
1990–1993	Carlo Cercignani	Polytechnic of Milano	President	General Mechanics
	Piero Villaggio	University of Pisa	Vice-President	Solids and Structures
	Leone Corradi	Polytechnic of Milano	Secretary	Solids and Structures
	Roberto Bassani	University of Pisa	Treasurer	Machines
	Giulio Maier	Polytechnic of Milano		Solids and Structures
	Renzo Piva	University of Roma La Sapienza		Fluids
	Castrenze Polizzotto	University of Palermo		Solids and Structures
1994–1997	Enrico Marchi	University of Genova	President	Fluids
	Piero Villaggio	University of Pisa	Vice-President	Solids and Structures
	Angelo Morro	University of Genova	Secretary	General Mechanics
	Roberto Contro	Polytechnic of Milano	Treasurer	Solids and Structures
	Roberto Bassani	University of Pisa		Machines
	Carlo Cercignani	Polytechnic of Milano		General Mechanics

(continued)

Table 4 (continued)

Year	Member	Affiliation	Role	Area
	Renzo Piva	University of Roma La Sapienza		Fluids
1998–2001	Gianfranco Capriz	University of Pisa	President	General Mechanics
	Roberto Contro	Polytechnic of Milano	Vice-President	Solids and Structures
	Angelo Morro	University of Genova	Secretary	General Mechanics
	Maurizio Pandolfi	Polytechnic of Torino	Treasurer	Fluids
	Giuliano Augusti	University of Roma La Sapienza		Solids and Structures
	Roberto Bassani	University of Pisa		Machines
	Enrico Marchi	University of Genova		Fluids
2002–2005	Angelo Morro	University of Genova	President	General Mechanics
	Giuliano Augusti	University of Roma La Sapienza	Vice-President	Solids and Structures
	Carlo Cinquini	University of Pavia	Secretary	Solids and Structures
	Maurizio Pandolfi	Polytechnic of Torino	Treasurer	Fluids
	Roberto Bassani	University of Pisa		Machines
	Gianfranco Capriz	University of Pisa		General Mechanics
	Mario Di Paola	University of Palermo		Solids and Structures
2006–2009	Giuseppe Rega	University of Roma La Sapienza	President	Solids and Structures
	Maurizio Pandolfi	Polytechnic of Torino	Vice-President	Fluids
	Angelo Morro	University of Genova	Secretary	General Mechanics
	Maria Lampis	Polytechnic of Milano	Treasurer	General Mechanics
	since March 2007 replaced by			
	Antonio Fasano	University of Firenze	Treasurer	General Mechanics
	Massimo Guiggiani	University of Pisa		Machines
	Mario Di Paola	University of Palermo		Solids and Structures
	Luigi Gambarotta	University of Genova		Solids and Structures
2010–2013	Carlo Cinquini	University of Pavia	President	Solids and Structures
	Paolo Luchini	University of Salerno	Vice-President	Fluids
	Angelo Morro	University of Genova	Secretary	General Mechanics
	Massimo Guiggiani	University of Pisa	Treasurer	Machines
	Guido Borino	University of Palermo		Solids and Structures
	Luigi Gambarotta	University of Genova		Solids and Structures
	Giuseppe Rega	University of Roma La Sapienza		Solids and Structures
2014–2017	Paolo Luchini	University of Salerno	President	Fluids
	Walter D'Ambrogio	University of L'Aquila	Vice-President	Machines
	Guido Borino	University of Palermo	Secretary	Solids and Structures
	Carlo Cinquini	University of Pavia	Treasurer	Solids and Structures

(continued)

Table 4 (continued)

Year	Member	Affiliation	Role	Area
	Sandra Carillo	Sapienza University of Roma		General Mechanics
	Stefano Lenci	Polytechnic University of Marche		Solids and Structures
	Elio Sacco	University of Cassino and Southern Lazio		Solids and Structures
2018–2021	Stefano Lenci	Polytechnic University of Marche	President	Solids and Structures
	Paolo Luchini	University of Salerno	Vice-President	Fluids
	Sandra Carillo	Sapienza University of Roma	Secretary	General Mechanics
	Umberto Perego	Polytechnic of Milano	Treasurer	Solids and Structures
	Carlo M. Casciola	Sapienza University of Roma		Fluids
	Walter D'Ambrogio	University of L'Aquila		Machines
	Fernando Fraternali	University of Salerno		Solids and Structures
2022–2025	Walter D'Ambrogio	University of L'Aquila	President	Machines
	Stefano Lenci	Polytechnic University of Marche	Vice-President	Solids and Structures
	Sandra Carillo	Sapienza University of Roma	Secretary	General Mechanics
	Umberto Perego	Polytechnic of Milano	Treasurer	Solids and Structures
	Carlo M. Casciola	Sapienza University of Roma		Fluids
	Fernando Fraternali	University of Salerno		Solids and Structures
	Elio Sacco	University of Napoli Federico II		Solids and Structures

Appendix 4: AIMETA Congresses

See Tables 5, 6, 7, and 8.

Table 5 Scientific Committee

Member	Affiliation	Area
I Udine 1971		
Luigi Sobrero (Chair)	University of Trieste	General Mechanics
Elio Giangreco	University of Napoli	Solids and Structures
Luigi G. Napolitano	University of Napoli	Fluids
Ario Romiti	Polytechnic of Torino	Machines
Giovanni Bianchi	Polytechnic of Milano	Machines
II Napoli 1974		
Luigi G. Napolitano (Chair)	University of Napoli	Fluids
Giovanni Bianchi	Polytechnic of Milano	Machines
Giulio Ceradini	University of Roma La Sapienza	Solids and Structures
Giovanni Jarre	Polytechnic of Torino	Fluids
Giulio Mattei	University of Siena	General Mechanics
Antonio Grimaldi	University of Napoli	Solids and Structures
III Cagliari 1976		
Giuseppe Aymerich (Chair)	University of Cagliari	General Mechanics
Angelo Berio	University of Cagliari	Solids and Structures
Giovanni Bianchi	Polytechnic of Milano	Machines
Vittorio Cantoni	Polytechnic of Torino	General Mechanics
Costantino Fassò	University of Cagliari	Fluids
IV Firenze 1978		
Giuliano Augusti (Chair)	University of Firenze	Solids and Structures
?	…	…
V Palermo 1980		
Nicola Alberti (Chair)	University of Palermo	Machines
Giuliano Augusti	University of Firenze	Solids and Structures
Guglielmo Benfratello	University of Palermo	Fluids
Giovanni Bianchi	Polytechnic of Milano	Machines
Carlo Ugo Galletti	University of Genova	Machines
Antonio Greco	University of Palermo	General Mechanics
Rodolfo Monti	University of Napoli	Fluids
Castrenze Polizzotto	University of Palermo	Solids and Structures
Salvatore Rionero	University of Napoli	General Mechanics
VI Genova 1982		
Riccardo Baldacci (Chair)	University of Genova	Solids and Structures
Aldo Belleni Morante	University of Firenze	General Mechanics
Edoardo Benvenuto	University of Genova	Solids and Structures
Andrea Capello	Polytechnic of Milano	Machines
Carlo Cercignani	Polytechnic of Milano	General Mechanics

(continued)

Table 5 (continued)

Member	Affiliation	Area
Enrico Marchi	University of Genova	Fluids
Umberto Meneghetti	University of Bologna	Machines
Rinaldo Michelini	University of Genova	Machines
Luigi Napolitano	University of Napoli	Fluids
Castrenze Polizzotto	University of Palermo	Solids and Structures
Edoardo Storchi	University of Genova	General Mechanics
VII Trieste 1984		
Giuseppe Grioli (Chair)	University of Padova	General Mechanics
Antonino Antonini	University of Trieste	Machines
Raffaele Cola	University of Padova	Fluids
Rinaldo Ghigliazza	University of Genova	Machines
Maurizio Pandolfi	Polytechnic of Torino	Fluids
Giannantonio Sacchi	Polytechnic of Milano	Solids and Structures
Alfredo Sollazzo	Polytechnic of Bari	Solids and Structures
Enzo Tonti	University of Trieste	General Mechanics
VIII Torino 1986		
Ario Romiti (Chair)	Polytechnic of Torino	Machines
Dionigi Galletto (Co-Chair)	University of Torino	General Mechanics
Giuseppe Bernasconi	Polytechnic of Milano	Machines
Elisa Udeschini Brinis	Polytechnic of Milano	General Mechanics
Giulio Ceradini	University of Roma La Sapienza	Solids and Structures
Vincenzo Franciosi	University of Napoli	Solids and Structures
Ettore Funaioli	University of Bologna	Machines
Tristano Manacorda	University of Pisa	General Mechanics
Angelo Morro	University of Genova	General Mechanics
Silvio Nocilla	Polytechnic of Torino	Fluids
Giannantonio Pezzoli	Polytechnic of Torino	Fluids
Castrenze Polizzotto	University of Palermo	Solids and Structures
IX Bari 1988		
Alfredo Sollazzo (Chair)	Polytechnic of Bari	Solids and Structures
Sergio Benenti	University of Torino	General Mechanics
Alfredo Corsanego	University of Genova	Solids and Structures
Franco Maceri	University of Roma Tor Vergata	Solids and Structures
Michele Maiellaro	University of Bari	General Mechanics
Michele Napolitano	Polytechnic of Bari	Fluids
Luciano Pirodda	University of Cagliari	Machines
Guido Ruggieri	Polytechnic of Milano	Machines

(continued)

Table 5 (continued)

Member	Affiliation	Area
Giambattista Scarpi	University of Bologna	Fluids
X Pisa 1990		
Marino Marini (Chair)	University of Pisa	Machines
Pasquale M. Calderale (Co-Chair)	Polytechnic of Torino	Machines
Gianfranco Capriz	TECSIEL - University of Pisa	General Mechanics
Luigi Cedolin	Polytechnic of Milano	Solids and Structures
Giulio Ceradini	University of Roma La Sapienza	Solids and Structures
Giovanni G. Lisini	University of Firenze	Machines
Giulio Mattei	University of Pisa	General Mechanics
Renzo Piva	University of Roma La Sapienza	Fluids
Mario Primicerio	University of Firenze	General Mechanics
Giovanni Romano	University of Napoli	Solids and Structures
Giovanni Seminara	University of Genova	Fluids
Furio Vatta	Polytechnic of Torino	Machines
XI Trento 1992		
Luigi Salvadori (Chair)	University of Trento	General Mechanics
Giovanni Bianchi	Polytechnic of Milano	Machines
Carlo Cinquini	University of Pavia	Solids and Structures
Umberto Meneghetti	University of Bologna	Machines
Mario Pitteri	University of Padova	General Mechanics
Giuseppe Rega	University of L'Aquila	Solids and Structures
Filippo Sabetta	University of Roma La Sapienza	Fluids
Gianbattista Scarpi	University of Bologna	Fluids
XII Napoli 1995		
Paolo Blondeaux	University of Genova	Fluids
Leone Corradi	Polytechnic of Milano	Solids and Structures
Gianpietro Del Piero	University of Ferrara	Solids and Structures
Antonio Fasano	University of Firenze	General Mechanics
Vincenzo Parenti Castelli	University of Ferrara	Machines
Amilcare Pozzi	University of Napoli Federico II	Fluids
Salvatore Rionero	University of Napoli Federico II	General Mechanics
Bernhard Schrefler	University of Padova	Solids and Structures
Aldo Sestieri	University of Roma La Sapienza	Machines
Fabrizio Vestroni	University of Roma La Sapienza	Solids and Structures
XIII Siena 1997		
Piero Villaggio (Chair)	University of Pisa	Solids and Structures
Renzo Piva	University of Roma La Sapienza	Fluids

(continued)

Table 5 (continued)

Member	Affiliation	Area
Giuliano Augusti	University of Roma La Sapienza	Solids and Structures
Giovanni Frosali	Polytechnic University of Marche	General Mechanics
Giovanni G. Lisini	University of Firenze	Machines
Carlo Marchioro	University of Roma La Sapienza	General Mechanics
Luciano Nunziante	University of Napoli Federico II	Solids and Structures
Giuseppe Rega	University of L'Aquila	Solids and Structures
Antonio Tralli	University of Ferrara	Solids and Structures
Furio Vatta	Polytechnic of Torino	Machines
XIV Como 1999		
Roberto Contro (Chair)	Polytechnic of Milano	Solids and Structures
Piero Bassanini	University of Rome La Sapienza	Fluids
Guido Belforte	Polytechnic of Torino	Machines
Andrea Carpinteri	Polytechnic of Torino	Solids and Structures
Vittorio Cossalter	University of Padova	Machines
Maria Lampis	Polytechnic of Milano	General Mechanics
Paolo Luchini	Polytechnic of Milano	Fluids
Paolo Podio Guidugli	University of Roma Tor Vergata	Solids and Structures
Giovanni Romano	University of Napoli Federico II	Solids and Structures
Filippo Sabetta	University of Roma La Sapienza	Fluids
XV Taormina 2001		
Giuliano Augusti (Chair)	University of Roma La Sapienza	Solids and Structures
Angelo M. Anile	University of Catania	General Mechanics
Guido Buresti	University of Pisa	Fluids
Leone Corradi	Polytechnic of Milano	Solids and Structures
Sergio Della Valle	University of Napoli Federico II	Machines
Mario Di Paola	University of Palermo	Solids and Structures
Giuseppe Oliveto	University of Catania	Solids and Structures
Maurizio Pandolfi	Polytechnic of Torino	Fluids
Bruno Pizzigoni	Polytechnic of Milano	Machines
XVI Ferrara 2003		
Giannantonio Sacchi Landriani (Chair)	Polytechnic of Milano	Solids and Structures
Guido Buresti	University of Pisa	Fluids
Roberto Contro	Polytechnic of Milano	Solids and Structures
Vincenzo D'Agostino	University of Salerno	Machines
Gianpietro Del Piero	University of Ferrara	Solids and Structures
Carlo Ugo Galletti	University of Genova	Machines

(continued)

Table 5 (continued)

Member	Affiliation	Area
Giorgio Graziani	University of Roma La Sapienza	Fluids
Giuseppe Muscolino	University of Messina	Solids and Structures
Franco Pastrone	University of Torino	General Mechanics
Umberto Perego	Polytechnic of Milano	Solids and Structures
Furio Vatta	Polytechnic of Torino	Machines
XVII Firenze 2005		
Mario Primicerio (Chair)	University of Firenze	General Mechanics
Gianni Bartoli	University of Firenze	Solids and Structures
Davide Bigoni	University of Trento	Solids and Structures
Guido Borino	University of Palermo	Solids and Structures
Ennio Carnevale	University of Firenze	Machines
Alberto Corigliano	Polytechnic of Milano	Solids and Structures
Massimiliano Lucchesi	University of Firenze	Solids and Structures
Paolo Luchini	University of Salerno	Fluids
Aleramo Lucifredi	University of Genova	Machines
Angelo Luongo	University of L'Aquila	Solids and Structures
Ettore Pennestrì	University of Roma Tor Vergata	Machines
Terenziano Raparelli	University of L'Aquila	Machines
Paolo Rissone	University of Firenze	Machines
Giampiero Spiga	University of Parma	General Mechanics
XVIII Brescia 2007		
Renzo Piva (Chair)	University of Roma La Sapienza	Fluids
Roberto Bassani	University of Pisa	Machines
Stefano Bennati	University of Pisa	Solids and Structures
Paolo Blondeaux	University of Genova	Fluids
Alberto Carpinteri	Polytechnic of Torino	Solids and Structures
Raffaele Casciaro	University of Calabria	Solids and Structures
Carlo Cinquini	University of Pavia	Solids and Structures
Mauro Fabrizio	University of Bologna	General Mechanics
Antonio Fasano	University of Firenze	General Mechanics
Francesco Genna	University of Brescia	Solids and Structures
Giovanni Mimmi	University of Pavia	Machines
Giorgio Novati	Polytechnic of Milano	Solids and Structures
Edzeario Prati	University of Parma	Machines
Elio Sacco	University of Cassino	Solids and Structures
Roberto Verzicco	Polytechnic of Bari	Fluids
XIX Ancona 2009		
Paolo Podio Guidugli (Chair)	University of Roma Tor Vergata	Solids and Structures

(continued)

Table 5 (continued)

Member	Affiliation	Area
Alessandro Bottaro	University of Genova	Fluids
Carlo M. Casciola	University of Roma La Sapienza	Fluids
Vincenzo Ciampi	University of Roma La Sapienza	Solids and Structures
Claudia Comi	Polytechnic of Milano	Solids and Structures
Fabrizio Davì	Polytechnic University of Marche	Solids and Structures
Luca Deseri	University of Trento	Solids and Structures
Giovanni Falsone	University of Messina	Solids and Structures
Giovanni Frosali	University of Firenze	General Mechanics
Luigi Garibaldi	Polytechnic of Torino	Machines
Giovanni Legnani	University of Brescia	Machines
Tommaso Ruggeri	University of Bologna	General Mechanics
Giovanni Santucci	University of Roma La Sapienza	Machines
Marco Savoia	University of Bologna	Solids and Structures
Giovanni Solari	University of Genova	Solids and Structures
XX Bologna 2011		
Antonio Tralli (Chair)	University of Ferrara	Solids and Structures
Benedetto Allotta	University of Firenze	Machines
Paolo Bisegna	University of Roma Tor Vergata	Solids and Structures
Maurizio Brocchini	Polytechnic University of Marche	Fluids
Giorgio Busoni	University of Firenze	General Mechanics
Giorgio Graziani	University of Roma La Sapienza	Fluids
Donatella Marini	University of Pavia	General Mechanics
Gianpiero Mastinu	Polytechnic of Milano	Machines
Achille Paolone	University of Roma La Sapienza	Solids and Structures
Luigi Preziosi	Polytechnic of Torino	General Mechanics
Santi Rizzo	University of Palermo	Solids and Structures
Luciano Rosati	University of Napoli	Solids and Structures
Michele Russo	University of Napoli	Machines
Antonio Taliercio	Polytechnic of Milano	Solids and Structures
Paolo Vannucci	University of Versailles	Solids and Structures
XXI Torino 2013		
Alberto Carpinteri (Chair)	Polytechnic of Torino	Solids and Structures
Nicola Bellomo	Polytechnic of Torino	General Mechanics
Francesco Benedettini	University of L'Aquila	Solids and Structures
Leonardo Bertini	University of Pisa	Machines
Salvatore Caddemi	University of Catania	Solids and Structures
Massimo Callegari	Polytechnic University of Marche	Machines
Claudio Canuto	Polytechnic of Torino	General Mechanics
Paolo Fuschi	University of Reggio Calabria	Solids and Structures
Raimondo Luciano	University of Cassino	Solids and Structures

(continued)

Table 5 (continued)

Member	Affiliation	Area
Franco Pastrone	University of Torino	General Mechanics
Gianni Pedrizzetti	University of Trieste	Fluids
Federico Perotti	Polytechnic of Milano	Solids and Structures
Terenziano Raparelli	Polytechnic of Torino	Machines
Gianni Royer Carfagni	University of Parma	Solids and Structures
Roberto Verzicco	University of Roma Tor Vergata	Fluids
Giorgio Zavarise	University of Salento	Solids and Structures
XXII Genova 2015		
Angelo Morro (Chair)	University of Genova	General Mechanics
Michele Ciarletta	University of Salerno	General Mechanics
Enrico Ciulli	University of Pisa	Machines
Domenico De Tommasi	Polytechnic of Bari	Solids and Structures
Claudio Giorgi	University of Brescia	General Mechanics
Giacomo Mantriota	Polytechnic of Bari	Machines
Antonino Morassi	University of Udine	Solids and Structures
Anna Pandolfi	Polytechnic of Milano	Solids and Structures
Antonina Pirrotta	University of Palermo	Solids and Structures
Egidio Rizzi	University of Bergamo	Solids and Structures
Maria Vittoria Salvetti	University of Pisa	Fluids
Giovanni Seminara	University of Genova	Fluids
Giovanni Solari	University of Genova	Solids and Structures
Patrizia Trovalusci	University of Roma La Sapienza	Solids and Structures
Mauro Velardocchia	Polytechnic of Torino	Machines
XXIII Salerno 2017		
Antonio Tralli (Chair)	University of Ferrara	Solids and Structures
Marco Carricato	University of Bologna	Machines
Antonella Cecchi	University of Venezia IUAV	Solids and Structures
Andrea Collina	Polytechnic of Milano	Machines
Mauro Fabrizio	University of Bologna	General Mechanics
Attilio Frangi	Polytechnic of Milano	Solids and Structures
Giuseppe Giambanco	University of Palermo	Solids and Structures
Nicola Ivan Giannoccaro	University of Salento	Machines
Renato Masiani	University of Roma La Sapienza	Solids and Structures
Roberta Massabò	University of Genova	Solids and Structures
Angelo Morro	University of Genova	General Mechanics
Giuseppe Muscolino	University of Messina	Solids and Structures
Roberto Paroni	University of Sassari	Solids and Structures
Eugenio Pugliese Carratelli	University of Salerno	Fluids
Alessandro Talamelli	University of Bologna	Fluids

(continued)

Table 5 (continued)

Member	Affiliation	Area
XXIV Roma 2019		
Giorgio Graziani (Chair)	University of Roma La Sapienza	Fluids
Lorenzo Bardella	University of Brescia	Solids and Structures
Davide Bigoni	University of Trento	Solids and Structures
Francesco Braghin	Polytechnic of Milano	Machines
Mario Di Paola	University of Palermo	Solids and Structures
Luciano Feo	University of Salerno	Solids and Structures
Domenico Guida	University of Salerno	Machines
Maria Grazia Naso	University of Brescia	General Mechanics
Nicola Rizzi	University of Roma Tre	Solids and Structures
Giuseppe Pascazio	Polytechnic of Bari	Fluids
Francesco Pellicano	University of Modena and Reggio Emilia	Machines
Alessandro Reali	University of Pavia	Solids and Structures
Vincenzo Tibullo	University of Salerno	General Mechanics
Patrizia Trovalusci	University of Roma La Sapienza	Solids and Structures
Antonio Viviani	University of Campania L. Vanvitelli	Fluids
XXV Palermo 2022		
Giuseppe Rega (Chair)	University of Roma La Sapienza	Solids and Structures
Vincenzo Armenio	University of Trieste	Fluids
Alessandro Bottaro	University of Genova	Fluids
Antonella Cecchi	University of Venezia IUAV	Solids and Structures
Claudia Comi	Polytechnic of Milano	Solids and Structures
Mauro Fabrizio	University of Bologna	General Mechanics
Luigi Gambarotta	University of Genova	Solids and Structures
Fabrizio Greco	University of Calabria	Solids and Structures
Marco Paggi	IMT School Lucca	Solids and Structures
Antonina Pirrotta	University of Palermo	Solids and Structures
Ferruccio Resta	Polytechnic of Milano	Machines
Alessandro Rivola	University of Bologna	Machines
Maurizio Romeo	University of Genova	General Mechanics
Elio Sacco	University of Napoli	Solids and Structures
Rosario Sinatra	University of Catania	Machines

Table 6 Keynote Lectures

Congress	Area	Author	Affiliation	Title
I Udine 1971	Fluids/Solids	R.E D. Bishop	London University	A survey of strength calculations for ship hulls
	General Mechanics	D. Galletto	University of Torino	Some recent results and developments in general mechanics and mathematical physics
	Solids	M. Capurso	University of Bologna	Mechanics of solids: General report
	Machines	A. Capello	Polytechnic of Milano	Mechanics of machines: General report
II Napoli 1974	?	?	?	?
III Cagliari 1976	General Mechanics	G. Grioli	University of Padova	On the mechanics of oriented tridimensional continua
	Machines	E. Funaioli	University of Bologna	?
	Fluids	A. Pezzoli	Polytechnic of Torino	?
IV Firenze 1978	General Mechanics	F. Brezzi	University of Pavia	?
	?	?	?	?
	?	?	?	?
V Palermo 1980	General Mechanics	C. Cercignani	Polytechnic of Milano	Kinetic theory of gases and thermomechanics of continua
	Solids and Structures	R. Baldacci	University of Genova	Phenomenological and structural plasticity
	Machines	S. Stecco	University of Firenze	Vibration phenomena in turbomachines ensuing from fluid-blade interaction
	Fluids	M. Ippolito	University of Napoli	Interaction effects on viscous properties of solid–liquid dispersed systems. Non-Newtonian behaviour and fluidynamic resistances
VI Genova 1982	Solids and Structures	W. T. Koiter	Delft University	?
	General Mechanics	L. Salvadori	University of Trento	?
	Fluids	R. Monti	University of Napoli	?
	Solids and Structures	G. Maier	Polytechnic of Milano	?
	Machines	A. Romiti	Polytechnic of Torino	?

(continued)

Table 6 (continued)

Congress	Area	Author	Affiliation	Title
VII Trieste 1984	General Mechanics	H. Ziegler	Polytechnic of Zurich	Thermodynamics
	General Mechanics	D. Galletto	University of Torino	Classical mechanics and cosmology
	Machines	L. Lazzarino	University of Pisa	Mechanics of machines: Contribution to the development of modern engineering
	Fluids	G. Moretti	Polytechnic Institute of New York	Numerical fluid mechanics
	Solids and Structures	G. Ceradini	University of Roma La Sapienza	Development and structural implications of the theory of plasticity
VIII Torino 1986	General Mechanics	P. Cicala	Polytechnic of Torino	Comments on recent developments of asymptotics
	Machines	J. Wittenburg	University of Karlsruhe	Multibody dynamics. A rapidly developing field of applied mechanics
	Machines/Structures	G.R. Tomlinson	Heriot-Watt University, Edinburgh	Hilbert transform procedures for detecting and quantifying non-linearity in modal testing
	Fluids	M.J. Werle	United Technologies Research Center, West Hartford	R. Thomas Davis. His contributions to numerical simulation of viscous flows—Part I, historical perspective
IX Bari 1988	General Mechanics	C. Truesdell	John Hopkins University	Some reflections upon theoretical mechanics in the past fifty years
	Solids and Structures	J. Lemaitre	University of Paris 6	Mechanics and micromechanics of damage
	Fluids	R. Piva	University of Roma La Sapienza	Boundary integral equations in fluidynamics
	Industrial	L. Guerriero	Italian Space Agency	Italian contributions to space activity
X Pisa 1990	General Mechanics	T. Manacorda	University of Pisa	Origin and development of the concept of wave
	Solids and Structures	V. Tvergaard	Technical University of Denmark, Lyngby	Mechanical modelling of ductile fracture
	Fluids	J.C.R. Hunt	University of Cambridge	How fluid mechanics can help solve problems in the environment
	Machines	W. Schiehlen	University of Stuttgart	Recent developments in multibody system dynamics
XI Trento 1992	General Mechanics	G.I. Barenblatt	Russian Academy of Sciences, Moscow	Intermediate asymptotics, scaling laws and renormalization group in continuum mechanics
	General Mechanics	L. Salvadori	University of Trento	?

(continued)

Table 6 (continued)

Congress	Area	Author	Affiliation	Title
	Solids and Structures	J.B. Martin	University of Cape Town	Piecewise smooth dissipation and yield functions in plasticity
	Fluids	K. Kirchgassner	University of Stuttgart	Structure of permanent waves in density-stratified media
XII Napoli 1995	General Mechanics	I. Müller	Technische Universitat Berlin	Instructive instabilities in non-linear elasticity: Biaxially loaded membrane, and rubber balloons
	Solids and Structures	N. Olhoff	Aalborg University	On optimum design of structures and materials
	Fluids	A. Hirschberg	Eindhoven University of Technology	Aeroacoustics of musical instruments
	Machines	A. Sestieri	University of Roma La Sapienza	Circumventing space sampling limitations in mechanical vibrations
XIII Siena 1997	General Mechanics	D.G. Crighton	DAMTP Cambridge University	Recent developments in structural acoustics
	Solids and Structures	Z. Mróz	IFTR Polish Academy of Sciences, Warsaw	Models of damage, slip and wear at material interface
	Fluids	G. Seminara	University of Genova	Stability and morphodynamics
	Machines	D. Dowson	University of Leeds	Modelling of elastohydrodynamic lubrication of real solids by real lubricants
XIV Como 1999	General Mechanics	H. Zorski	Polish Academy of Sciences, Warsaw	Locally rigid model of the peptide chain
	Solids and Structures	S.C. Cowin	City University of New York	Structural change in living tissues
	Fluids	P. Luchini	Polytechnic of Milano	New concepts for fluid-dynamics stability: Algebraic growth and added calculation of receptivity
	Machines	F. Pfeiffer	Technical University of Munich	Unilateral problems in dynamics
XV Taormina 2001	General Mechanics/Solids	M. Šilhaví	Mathematical Institute of AVČR, Prague	Dissipation postulates in finite-deformation plasticity
	Solids and Structures	P.J. Prendergast	Trinity College Dublin & TU Delft	Mechanical aspects of function and adaptation in the skeleton
XVI Ferrara 2003	General Mechanics/Solids	D.R. Owen	Carnegie Mellon University, Pittsburgh	Decompositions and identification relations as guides in the formulation of multiscale continuum field theories
	Solids and Structures	S.C. Cowin	The City College, New York	Bones have ears

(continued)

Table 6 (continued)

Congress	Area	Author	Affiliation	Title
	Fluids	A. Bottaro	Université Paul Sabatier, Toulouse	Initial stages of the transtion to turbulence in near-wall flow
	Machines	A.Z. Szeri	University of Delaware, Newark	On some inconsistencies in the application of the Reynolds lubrication theory
XVII Firenze 2005	Solids and Structures	N. Makris	University of Patras	Dimensional response analysis of yielding structures under near source ground motions
	Machines	A. Kahraman	Ohio State University	On the relationship between gear dynamics and surface wear
XVIII Brescia 2007	General Mechanics	C. Cercignani	Polytechnic of Milano	Fluid dynamics in MEMS and NEMS: A recent application of kinetic theory
	Solids and Structures	A.H. Nayfeh	Virginia Polytechnic Institute	Nonlinear phenomena in MEMS and NEMS
	Solids and Structures	G. Geymonat	Ecole Polytechnique Palaiseau	Some problems suggested by multi-materials and functionally graded materials
	Fluids	A. Prosperetti	Johns Hopkins University	The average stress in fluid-particle flows
	Industrial	B. Murari	STMicroelectronics	Breaking innovations: The role of lateral thinking
	Industrial	G. Audisio	Pirelli Tyre System	New frontiers of automotive innovation: The key factors
XIX Ancona 2009	Solids and Structures	J.J. Marigo	École Polytechnique Palaiseau	From initiation of cracks to fatigue: Some fundamental contribution of the variational approach to fracture
	Solids and Structures	G. Stepan	Budapest Univeristy of Technology	Balancing and vision - or The dynamics of poise
	Solids and Structures	G. Del Piero	University of Ferrara	The variational approach to fracture and to other inelastic phenomena
	Fluids	G. Pedrizzetti	University of Trieste	Cardiac fluid mechanics: From theory to clinical applications
	Industrial	A. Mencarini	Indesit	Innovation process in household appliances segment: Issues and opportunities
	Industrial	G. Rivetti	Cantieri Navali Marchigiani	Management and projects of the nautical supply chain
XX Bologna 2011	Solids and Structures	G. Romano	University of Napoli Federico II	On the geometric approach to non-linear continuum mechanics
	Solids and Structures	G. Sacchi Landriani	Polytechnic of Milano	Solid mechanical problems in the Risorgimento generation

(continued)

Table 6 (continued)

Congress	Area	Author	Affiliation	Title
	Machines	T. Bewley	University of California San Diego	New approaches for observation and forecasting of contaminant release plumes via coordination of swarms of sensor vehicles
	Industrial	D. Barana	Ducati Motor Holding	The development of high specific power engines
	Industrial	L. Marmorini	Ferrari GeS	Energy recovery in F1 cars: A necessity to win
XXI Torino 2013	General Mechanics	F. Brezzi	University of Pavia	Virtual element methods in structural mechanics
	Solids and Structures	V. Tvergaard	Technical University of Denmark, Lyngby	Ductile fracture at different levels of hydrostatic tension
	Solids and Structures	P. Podio Guidugli	University of Roma Tor Vergata	On the validation of theories of thin elastic structures
	Fluids	F. Charru	CNRS-INP-UPS – Université de Toulouse	Sand ripples and dunes
	Industrial	S. Re Fiorentin	FIAT Research Centre	Multidisciplinary optimization as a key step forward in the automotive design
XXII Genova 2015	Solids and Structures	C. Comi	Polytechnic of Milano	On chemo-mechanical degradation phenomena in concrete
	Solids and Structures	M. Di Paola	University of Palermo	Fractional calculus in mechanics and dynamics
	Fluids	L. Brandt	KTH Stockolm	Numerical simulations of particle suspensions
	Machines	M. Guiggiani	University of Pisa	Transient vehicle dynamics
	Industrial	M. Debenedetti	Fincantieri	Research and innovation in shipbuilding: The approach of Fincantieri
	Industrial	G. Metta	Italian Institute of Technology	iCub: A research platform for robotics & AI
XXIII Salerno 2017	General Mechanics	C. Giorgi	University of Brescia	Global analysis of asymptotic behavior for infinite dimensional dynamic systems
	Solids and Structures	J.N. Reddy	Texas A&M University	Recent developments in shell finite elements and non-local theories for composite structures
	Solids and Structures	F. Vestroni	Sapienza University of Roma	Resonance phenomena in hysteretic systems
	Machines	V. Parenti Castelli	University of Bologna	Frontiers of machine mechanics
	Industrial	J. Pasfall	Fiberline Composites A/S	Perspective on market, barriers and examples of recent projects realized with GFRP

(continued)

Table 6 (continued)

Congress	Area	Author	Affiliation	Title
XXIV Roma 2019	Solids and Structures	C. Daraio	California Institute of Technology	Mechanics of robotic matter
	Solids and Structures	A. Pandolfi	Polytechnic of Milano	OTM: Combining optimal transportation theory and meshless discretization for the simulation of general solid and fluid flows
	Fluids	R. Di Leonardo	Sapienza University of Roma	The statistical and fluid mechanics of swimming bacteria
	Machines	M. Ruzzene	Georgia Institute of Technology	Metastructures for wave and vibration control: Internal resonances, edge states and quasi-periodicity
	Archeology	P. Carafa	Sapienza University of Roma	Construction techniques in the Rome of the Palatine
XXV Palermo 2022	Solids and Structures	R. Massabò	University of Genova	to be announced
	Solids and Structures	S. Reese	Aachen University	to be announced
	Fluids	D. Ohl	University of Twente	to be announced
	Machines	G. Diana	Polytechnic of Milano	to be announced

Table 7 Regular papers

Congress	General Mechanics	Solids and Structures	Fluids	Machines	Special Sessions	Mini-Symposia	Total
I Udine 1971	12	27	15	21			75
II Napoli 1974	25	46	25	39			135
III Cagliari 1976	18	35	29	15			97
IV Firenze 1978	23	33	14	21			91
V Palermo 1980	30	25	8	30			93
VI Genova 1982	32	67	29	55			183
VII Trieste 1984	23	57	20	58			158
VIII Torino 1986	22	37	32	51			142
IX Bari 1988	26	71	26	49			172
X Pisa 1990	14	63	29	61			167
XI Trento 1992	22	86	23	50			181
XII Napoli 1995	18	146	44	54			262
XIII Siena 1997	22	117	27	59			225
XIV Como 1999	16	120	38	61			235

(continued)

Table 7 (continued)

Congress	General Mechanics	Solids and Structures	Fluids	Machines	Special Sessions	Mini-Symposia	Total
XV Taormina 2001	12	84	20	56	66	55	293
XVI Ferrara 2003	12	73	23	70	152		330
XVII Firenze 2005	13	138	23	88		28	290
XVIII Brescia 2007	14	167	50	87	31		349
XIX Ancona 2009	12	162	29	57	99		359
XX Bologna 2011	20	148	27	67	150		412
XXI Torino 2013	18	75	27	27		167	314
XXII Genova 2015	8	30	30	16		259	343
XXIII Salerno 2017	9	28	17	22		303	379
XXIV Roma 2019	3	19	21	10		332	385
XXV Palermo 2022	?	?	?	?	?	?	?

Table 8 Special Sessions and Mini-Symposia, with specific organizers (if any)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
XV Taormina 2001	SS	Non-convex energies—G. Del Piero	9
		Fracture mechanics—A. Carpinteri	19
		Damage in composite materials—A. Corigliano	17
		Computational mechanics—U. Perego	21
	MS	Mechanics of tissues and implants—R. Contro, P.J. Prendergast	27
		Multifield theories in mechanics of materials—G. Capriz, P.M. Mariano	9
		Interaction problems in structural mechanics—W.S. Hall, G. Oliveto	19
XVI Ferrara 2003	SS	Dynamics of mechanical systems, linear and nonlinear dynamics, control and structural response—A. Sestieri, G. Muscolino	42
		Microstructures in elasticity and plasticity—G. Del Piero	15
		Fracture problems and interface problems in composite materials—A. Corigliano	21
		Inverse problems in the mechanics of structural materials—G. Maier, F. Vestroni	26
		Unusual thin structures—P. Podio Guidugli, A. Di Carlo	7
		Computational mechanics—U. Perego	41
XVII Firenze 2005	Structures	Finite elements	10
		Analysis and identification of damage and fracture	11
		Stability	5
		Composites	8
		Masonry	11
		FRP	5

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Dynamics and vibrations	4
		Dynamics	6
		Stochastic	6
	Solids	Dynamics and stability	6
		Nanostructures	4
		Constitutive laws	7
		Fracture mechanics	6
		Analytical solutions	7
		Finite elements and solids not resistant to traction	6
		Damage analysis and identification	5
	Fluids	Computational fluid dynamics	4
		Turbulence	7
		Biofluid-dynamics	5
	Machines	Gears	6
		Contact	6
		Multibody	4
		Robotics	11
		Vehicles	16
		Cams and lubrication	7
		Biomechanics and magnetic suspension	6
		Dynamics	6
		Simulation	9
		Analysis and control of vibrations	5
	MS	Aerodynamics of separate flows and squat bodies	6
		Stochastic mechanics in structural engineering applications	10
		Nanotechnologies: building up structures at the nano and meso-scales	12
XVIII Brescia 2007	General Mechanics	Numerical methods in dynamics	4
		Non-linear dynamics	5
	Structures	Instability of structures and solids	5
		Beam theory	6
		Structural analysis	12
		FRP	5
		Structural safety	4
		Structural dynamics	5
		Structural dynamics: beams and cables	4
		Structural dynamics: models	4
		Structural dynamics: identification	6
		Structural dynamics: moving loads	3
		Structural optimization	5

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Structural identification	4
		Structural diagnostics	5
		Seismic engineering	4
		Masonry	10
	Solids	Phase transformations and shape memory materials	5
		Biomechanics	6
		Plasticity, limit analysis, shakedown	6
		Rocks, soil, snow	6
		Elasticity	9
		Interfaces	5
		Multi-phase problems	4
		Saint-Venant solid	4
		Finite elements	4
		Boundary elements	10
		Models for rubber and polymeric materials	4
		Fracture mechanics	13
		Masonry	4
		Homogenization	6
	Fluids	Biofluid-dynamics	4
		Combustion and aeroacoustics	6
		Turbulence	5
		Vorticity	4
		Numerical simulations in turbulence	4
		Gas-dynamics	5
		Fluid mechanics: stability and fluid dynamics	4
		Aerodynamics of separate flows and squat bodies	3
		Hydraulics	9
		Applications of hydraulics and fluid-dynamics	6
	Machines	Articulated systems and cams	4
		Belt drives and machine dynamics	5
		Gears	6
		Rotor dynamics	7
		Biomechanics	7
		Robotics	17
		Mechanisms	5

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Tribology	10
		Railway vehicles	6
		Dynamics and fluids	4
		Vehicle dynamics	12
		MEMS	5
	SS	Functionally graded materials (FGM)	5
		Fluid-dynamics of real gases	4
		Miniaturized mini-robotic systems	6
		Joint session AIAS-AIMETA: Mechanics of composite materials	16
XIX Ancona 2009	Structures	Membranes, plates	6
		Finite elements, boundary elements	17
		Identification, control, optimization	6
		Elasto-plastic analysis, limit analysis, real cases	6
		Monodimensional continua	6
		FRP	9
		Instability and collapse	12
		Structural dynamics: models	9
		Masonry	11
		Non-linear dynamics	12
		Composites, laminates, FGM	11
	Solids	Interfaces	6
		Coupled and multiphase problems	6
		Plasticity and damage	17
		De St. Venant solid	3
		Models for rubber and polymeric materials	3
		Elasticity	12
		Fracture	5
		Homogenization	5
	Fluids	Complex fluids and heat transfer	5
		Free surface waves	5
		Numerical simulation techniques	5
		Vorticity and aerodynamics	3
		Turbulence	5
		Non-conventional numerical methods	6
	Machines	Vibrations	6
		Mechanisms	5
		Vehicles	5
		Biomechanics	6

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Drives and actuators	9
		Components	11
		Dynamics	3
		Robotics	12
	SS	Dynamical methods of experimental investigation—A. Morassi, F. Benedettini	26
		Biomechanics and biomaterials—L. Deseri	20
		Mechanics of materials and systems at micro and nano scales—C. Comi, L. Deseri	17
		Innovation and research as a support to industrial competitiveness—M. Callegari, P. Sermellini	15
		Variational models for fracture—M. Angelillo	10
		Control of flows—R. Donelli, P. Luchini	6
		The analytical approach to the two-dimensional dynamics of vorticity. Is it just an obsolete fact?—G. Riccardi	5
XX Bologna 2011	SS	Multiphase flows—A. Soldati, C.M. Casciola	6
		Inverse problems in mechanics of solids and structures—R. Fedele, A. Morassi	17
		Towards the assessment of quality and reliability of large-eddy simulations—M.V. Salvetti	8
		Micro- or nano-mechanics—A. Corigliano, N. Pugno	29
		Recent developments in the mechanics of masonry structures—L. Gambarotta, E. Sacco	34
		Biomechanics of the eye: experiments, theoretical and numerical modelling—M. Angelillo, A. Pandolfi, T. Rossi	11
		Mathematical contributions to the study of thin structures—R. Paroni, E. Zappale	17
		Models and methods for the nonlinear analysis of slender structures—R. Casciaro, F. Ubertini	11
		Structural joints, physical discontinuities and material interfaces: modeling, experimental and numerics—L. Contrafatto, F. Fraternali, N. Valoroso, G. Ventura	12
		Computational mechanics—M. Cuomo, F. Auricchio, F. Ubertini	5
XXI Torino 2013	MS	Fracture and structural integrity—G. Ferro, D. Firrao, M. Paggi, A. Spagnoli	10
		Advances in mechanics of materials—L. Deseri, R. Massabò, O. Vena, A. Corigliano	49
		Advanced methods for computational mechanics: beyond classical finite elements—F. Auricchio, J. Kiendl, A. Reali	11
		Computational biomechanics: applications to cardiovascular problems—F. Auricchio, M. Conti, S. Morganti, A. Reali	6
		Dynamics and control of the response of mechanical systems—W. D'Ambrogio, S. Casciati	23

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Dynamical systems, stability and bifurcation—A. Luongo, F. Tubino	23
		Smart and biological materials: mathematical models and applications—S. Carillo, M. Ciarletta	5
		Advanced beam models for homogeneous and non-homogeneous structures—A. Pagani, M. Petrolo, P.S. Valvo, E. Zappino	14
		Computational methods for shell structures—C. Chinosi, M. Cinefra, L. Della Croce, F. Tornabene	5
		Interdisciplinary problems in the physics of porous media: models, numerics and experiments for biomechanics to hydrogeology—A. Grillo	12
		Super-hydrophobic surfaces and heterogeneous nucleation processes—C.M. Casciola, G. Carbone	6
		Innovative computational methodologies in mechanics—C. Canuto	3
XXII Genova 2015	MS	GIMC: Recent advances in computational mechanics—S. Marfia, A. Pandolfi, A. Reali, G. Zavarise	30
		GADES: Dynamics and stability of mechanical systems—A. Luongo, S. Carillo, W. D'Ambrogio	59
		Advances in biomechanics: from basic research to applications—P. Bisegna, V. Parenti Castelli, G. Pedrizzetti	20
		Cellular mechanobiology and morphogenesis of living matter—D. Ambrosi, P. Ciarletta, L. Preziosi	12
		Masonry modeling: from theory to numerical and simplified approaches—D. Addessi, G. Milani, E. Sacco	31
		Mobile robotics—L. Bruzzone, G. Quaglia, G. Reina	9
		MEMS and NEMS: Models and analysis of micro- and nano-electro-mechanical systems—A. Corigliano, S. Lenci, A. Mariani	19
		GMA: Mechanics and materials 2015—L. Bardella, R. Massabò, P. Vena	37
		GMA Specialist session: Active soft materials—G. Noselli, A. Lucantonio	10
		GMA Specialist session: Non-local modeling of materials—A. Bacigalupo, F. Dal Corso, A. Piccolroaz	20
		GMA Specialist session: Materials for tissue engineering—F. Barberis, A. Lagazzo	5
		GMA Specialist session: Damage characterization in composite materials—V. Lopresto, A. Langella	7
XXIII Salerno 2017	MS	Theoretical and applied biomechanics for cardiovascular problems—M. Conti, M. Marano, G. Vairo, M. Zingales	12
		GADES: Dynamics and stability of mechanical systems—M.G. Naso, F. Pellicano, G. Piccardo	46
		Variational methods and applications in solid mechanics—G. Cricrì, E. Zappale	12
		Innovative lattice structures and materials—A. Favata, L. Feo, F. Fraternali, A. Micheletti, R.E. Skelton	24
		Mechanical behavior of masonry: modeling and numerical procedures—D. Addessi, E. Sacco	21

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Mechanical behavior of masonry: analysis of shell structures—F. Marmo, G. Milani, L. Rosati	17
		GIMC: New approaches in computational mechanics—S. Marfia, A. Pandolfi, A. Reali	22
		Fluid-structure interaction: methods and applications—F. Auteri, M.D. de Tullio, F. Giannetti	11
		Fracture: interface models and "phase-field" approaches—R. Alessi, F. Freddi, G. Lancioni, E. Sacco	31
		GMA: Mechanics and materials—L. Bardella, M. Paggi, P. Vena	16
		GMA: Soft active materials—G. Noselli, A. Lucantonio	9
		GMA: Mechanics of "green" composites: mechanical characterization and related technological aspects—F. Fabbrocino, P. Russo, F. Colangelo	16
		GMA: Recent advances in mechanical modeling of composite materials and periodic structures- A. Bacigalupo, F. Dal Corso, M.L. De Bellis, A. Piccolroaz	25
		GMA: Mechanics and reliability of piezoelectric materials—P.S. Valvo, M. Paggi	7
		Advanced and physically oriented numerical methods for continuous mechanics simulations—G. Coppola, M.D. de Tullio, F. Capuano	6
		GMS: Stochastic and probability computation approaches in mechanics—A. Pirrotta, L. Rosati, S. Sessa	11
		Coatings for tribological applications: modeling and characterization—G. Carbone, M. Di Donato, G. Favaro	7
		Extreme material mechanics: graphene, composites, metamaterials and biological /bioinspired materials—F. Bosia, M. Fraldi, N.M. Pugno	10
XXIV Roma 2019	MS	Interface models and phase-field approaches for fracture and damage mechanics—R. Alessi, M. Brunetti, F. Freddi, G. Lancioni, E. Sacco	22
		Composites in civil engineering—F. Ascione, V. Carvelli, P. Colombi, R.S. Olivito, G. Vairo	18
		Mechanics and materials (GMA) —L. Bardella, G. Noselli, M. Paggi	57
		Modelling and analysis of small-scale structures—R. Barretta, M. Fraldi, F. Marotti de Sciarra	10
		Theoretical and applied biomechanics (GBMA)—P. Bisegna, V. Parenti Castelli, G. Pedrizzetti, M.D. De Tullio, M. Marino, N. Sancisi, G. Vairo	28
		Shell and spatial structures—S. Gabriele, F. Marmo, A. Micheletti, V. Varano	12
		Vehicle dynamics—B. Lenzo, M. Guiggiani	13
		Novel approaches in computational mechanics (GIMC)—S. Marfia, A. Pandolfi, A. Reali	28
		Mechanics and geometry—P. Nardinocchi, R. Paroni	11
		Dynamics and stability of mechanical systems (GADeS)—F. Pellicano, G. Piccardo, M. Romeo	46
		Stochastic mechanics and probability in engineering—A. Pirrotta, A. Di Matteo, F.P. Pinnola	18

(continued)

Table 8 (continued)

Congress	Special Sessions (SS) and Mini-Symposia (MS)		Papers
		Recent advances and challenges in structural mechanics and engineering—L. Rosati, S. Sessa, N. Vaiana	18
		Hydrothermal ageing of natural fibre polymer composites—P. Russo, F. Nanni, F. Fabbrocino	6
		Masonry constructions: from material to structures, modelling and analysis approaches—E. Sacco, D. Addessi, F. Marmo, G. Milani	32
		Theoretical, numerical and physical modelling in geomechanics—C. Tamagnini, C. Jommi, A. Amorosi	13
XXV Palermo 2022	MS	Novel approaches in computational mechanics—S. Marfia, G. Garcea, S. de Miranda	?
		Theoretical and applied biomechanics GBMA—P. Bisegna, V. Parenti Castelli, G. Pedrizzetti, M.D. De Tullio, M. Marino, N. Sancisi, G. Vairo	?
		Masonry modelling and analysis: from material to structures—D. Addessi, G. Castellazzi, F. Clementi, G. Milani	?
		Dynamical systems and applications in civil and mechanical structures—F. D'Annibale, M. Ferretti, M. Romeo	?
		Control and experimental dynamics—F. Pellicano, G. Piccardo, D. Zulli	?
		Mechanical modelling of metamaterials and periodic structures—A. Bacigalupo, F. Dal Corso, M.L. De Bellis, A. Piccolroaz	?
		Novel stochastic dynamics methodologies & signal processing techniques for civil engineering applications—V. Gusella, A. Pirrotta	?
		Open issues on procedures and methodologies for the vibration-based monitoring and dynamic identification of historic constructions—M. Betti, G. Boscato, N. Cavalagli, A. Cecchi, F. Clementi	?
		Modeling and analysis of nanocomposites and small-scale structures—F.P. Pinnola, M.S. Vaccaro	?
		Reaction-diffusion-drift equations and gradient flows in mechanics and continuum physics—F. Davì, M. Paggi, A. Gizzi	?
		New frontiers in multibody systems vibration analysis—A. Cammarata, P.D. Maddio, F. Garesci, M. Cammalleri	?
		Mechanics of renewable energy systems—C. Baniotopoulos, C. Borri, C.L. Bottasso, L. Cappietti, E. Marino	?
		Advances in mathematical modeling and experimental techniques for quantification and prediction of fluid dynamic noise—V. Armenio, R. Camussi, M. Felli, M. Gennaretti	?
		Advanced process mechanics—G. Buffa, L. Filice, A. Ghiotti	?

Appendix 5: *Meccanica*: Special Issues

Looking at the list of Special Issues published in a journal allows to follow the evolution of both the editorial means preferentially used to disseminate scientific knowledge/results and the topics of major interest by a given community of scientists. Indeed, in the last few decades, publication of a number of Special Issues per year has become a general editorial policy to attract scientists' interest to a given journal, also in connection with the explosion of both journals and conferences, as well as the right occasion to draw new research lines and/or advancements in well-established areas.

This is apparent also in the case of *Meccanica* (Table 9). In about the first half of its more than fifty years life, very few Special Issues were published and nearly only for celebration and anniversary purposes (such as the retirement, birthday or memory of recognized scholars). Since around the turn of the millennium, the trend has modified radically, with Special Issues being published nearly regularly, and independent of solely episodical celebration purposes, also in connection with the greater visibility secured by an important international publisher. A circumstance which also entails the editorial involvement of qualified international scientists active in different fields, sometimes in collaboration with Italian ones. Anyway, the also independent presence of the latter witnesses the vitality of the Italian school of mechanics, already apparent in the earlier publication stages of *Meccanica*, which persists, and indeed increases, in accordance with the high position it generally occupies in qualified international rankings, independent of possible opinions about their overwhelming significance and pervasiveness. Indeed, in a considerable number of meaningful cases, new research lines (concerned, among others, with micro/nano-scale levels, multiphysics, nonlinear and control aspects, novel materials, more clearly identified technological applications) are being effectively documented, along with important advancements in well-established areas. This occurs despite some proliferation of associated wording (recent advances/progress, new trends, etc.) which may prevent the reader from clearly catching the stage of development of the considered research area along its overall parabola.

See Table 9.

Table 9 Special Issues of *Meccanica*

Title	Guest Editors	Vol (issue)	Year	No. papers
Recent advances in computational mechanics and innovative materials (*for the 75th birthday of J.N. Reddy*)	G.H. Paulino, E. Sacco	56(6)	2021	18
Modelling and numerical/experimental investigation of dynamical phenomena in mechanical systems	J. Awrejcewicz, M. Amabili, A. Nabarette	56(4)		16
Recent advances in nonlinear dynamics and vibrations	P. Perlikowski, J. Warminski, S. Lenci	55(12)	2020	18
Computational models for 'complex' materials and structures, beyond the finite elements	P. Trovalusci, F. Cui	55(4)		20
Recent advances in modeling and simulations of multiphase flows	F. Picano, O. Tammisola, L. Brandt	55(2)		9
Mechanics of extreme materials	F. Bosia, M. Fraldi, N.M. Pugno	54(13)	2019	10
Stochastics and probability in engineering mechanics	C. Bucher, A. Pirrotta, C. Proppe, L. Rosati	54(9)		13
Progress in mechanics of soils and general granular flows	P. Giovine, P.M. Mariano, G. Mortara, K. Soga	54(4–5)		11
New trends in mechanics of masonry	E. Sacco, D. Addessi, K. Sab	53(7)	2018	20
Novel computational approaches to old and new problems in mechanics	S. Marfia, A. Pandolfi, A. Reali	53(6)		17
Recent advances on the mechanics of materials	L. Bardella, M. Paggi, P. Vena	53(3)		10
Active behavior in soft matter and mechanobiology	A. De Simone, G. Noselli, A. Lucantonio, P. Ciarletta	52(14)	2017	16
New trends in dynamics and stability	S. Carillo, W. D'Ambrogio	52(13)		18
Advances in biomechanics: from foundations to applications	P. Bisegna, V. Parenti Castelli, G. Pedrizzetti	52(3)		19
50th Anniversary of Meccanica	L. Gambarotta	51(12)	2016	22
Nonlinear dynamics, identification and monitoring of structures (*in memory of Francesco Benedettini*)	A. Luongo, G. Rega	51(11)		22
Recent progress and novel applications of parallel mechanisms	A. Müller, V. Parenti Castelli, T. Huang	51(7)		9

(continued)

Table 9 (continued)

Title	Guest Editors	Vol (issue)	Year	No. papers
Computational micromechanics of materials	J. Segurado, T. Sadowski, J. Llorca, S. Schmauder	51(2)		17
Soft mechatronics	G. Berselli, X. Tan, R. Vertechy	50(11)	2015	15
Advances in the mechanics of composite and sandwich structures (*for the 65th birthday of Marco Di Sciuva*)	S. Abrate, M. Gherlone, R. Massabò	50(10)		10
Advances in dynamics, stability and control of mechanical systems	A. Luongo	50(3)		21
Experimental solid mechanics (*for the 65th birthday of Emmanuel E. Gdoutos*)	A.N. Kounadis	50(2)		24
Multi-scale and multi-physics modelling for complex materials	T. Sadowski, P. Trovalusci, B. Schrefler, R. de Borst	49(11)	2014	12
New trends in fluid and solid mechanical models	M. Fabrizio	49(9)		22
Nonlinear dynamics and control of composites for smart engineering design	S. Lenci, J. Warminski	49(8)		18
Micro- or nano-mechanics	A. Corigliano, N.M. Pugno	48(8)	2013	20
Asperity contacts and lubrication aspects	E. Ciulli, F. Franek	46(3)	2011	13
Fundamental issues and new trends in parallel mechanisms and manipulators	C. Gosselin, V. Parenti Castelli, F. Pierrot	46(1)		21
Simulation, optimization and identification	J.L. Zapico Valle, M.P. González Martínez	45(5)	2010	9
Recent advances in experimental and theoretical analysis of stress and strain	D. Amodio, S. Lenci	43(2)	2008	14
Advanced problems in mechanics	M. Boltežar, M. Wiercigroch, D. Indeitsev	41(3)	2006	9
Mechanics from nano to macroscopic level	G. Capriz, P.M. Mariano	40(4–6)	2005	11
Dynamical systems: theory and applications	J. Awrejcewicz	38(6)	2003	14
(*for the 70th birthday of Piero Villaggio*)	G. Augusti, S. Bennati	38(5)		10
Control and condition monitoring of engineering systems	M. Wiercigroch, A.A. Rodger	38(2)		8
Nonlinear dynamics of mechanical systems	M. Wiercigroch, E. Kreuzer, T. Kapitaniak	38(1)		12

(continued)

Table 9 (continued)

Title	Guest Editors	Vol (issue)	Year	No. papers
Mechanics of tissues and tissue implants	P.J. Prendergast, R. Contro	37(4–5)	2002	15
Stochastic dynamics of non-linear mechanical systems	M. Di Paola	37(1–2)		13
Topics in tribology	R. Bassani	36(6)	2001	14
Boundary element methods in soil-structure interaction	W.S. Hall, G. Oliveto	36(4)		10
(*for the 70th birthday of Giulio Maier*)	L. Corradi, G. Novati, U. Perego	36(1)		9
(*in memory of Carlo Ferrari*)	S. Nocilla	33(5)	1998	7
Nonlinear and random dynamics	G. Solari	33(3)		11
Control and diagnostics in automotive applications	A. Gambarotta	32(5)	1997	9
Transform methods in solid mechanics	H. Grundmann, A. Liolios	32(3)		10
Thermodynamics of continua (*for the 70th birthday of Gianfranco Capriz*)	G. Augusti	31(5)	1996	13
Bifurcation and chaos in solid and structural dynamics	G. Rega, F. Pfeiffer	31(3)		8
Hydrometeorology	L. Ubertini	31(1)		9
Microstructures and phase transitions in solids (*for the 70th birthday of J.L. Ericksen*)	C. Davini, M. Pitteri	30(5)	1995	17
Dynamics and geometry of vortical structures	P. Orlandi, E. Hopfinger	29(4)	1994	15
(*in memory of Giorgio Sestini*)	A. Fasano, M. Primicerio	28(2)	1993	10
Masonry construction: structural mechanics and other aspects (*for the retirement of Jacques Heyman*)	C.R. Calladine	27(3)	1992	8
Progress of the structural analysis problem since Castigliano *(for the death centenary of Alberto Castigliano)*	P. Cicala, F. Levi, U. Rossetti	19(1)	1984	11
Presentations from the 1st AIMETA National Congress	D. Galletto, M. Capurso, A. Capello	7(1)	1972	3+ summ.
(*for the retirement of Bruno Finzi*)	E. Massa, G. Supino	5(1)	1970	7

Appendix 6: AIMETA Groups (current)

See Tables 10, 11, 12, 13, 14, 15, and 16.

Table 10 Italian Group of Computational Mechanics (GIMC). Since 1984, founder A. Cannarozzi

Executive committee	S. Marfia	University of Roma Tre
	S. de Miranda	University of Bologna
	G. Garcea	University of Calabria
Meetings	2018	XXII Italian Congress of Computational Mechanics—IX GMA Meeting, University of Ferrara
	2016	XXI Italian Congress of Computational Mechanics—VIII GMA Meeting, IMT School for Advanced Studies, Lucca
	2014	XX Italian Congress of Computational Mechanics—VII GMA Meeting, University of Cassino
	2012	XIX Italian Congress of Computational Mechanics, Rossano
	2010	XVIII Congress of Computational Mechanics, Siracusa
	2008	XVII Congress of Computational Mechanics, Sassari
	2006	XVI Congress of Computational Mechanics, Bologna
	2004	XV Congress of Computational Mechanics, Genova
	2002	XIV Congress of Computational Mechanics—III Joint Conference with Ibero-Latin Association of Computational Methods in Engineering, Giulianova
	2001	I CSMA-GIMC Joint Workshop, Cefalù
	2000	XIII Congress of Computational Mechanics, Brescia
	1999	XII Congress of Computational Mechanics, Napoli
	1998	XI Congress of Computational Mechanics, Trento
	1996	X Congress of Computational Mechanics—I Joint Conference with Ibero-Latin Association of Computational Methods in Engineering, Padova
	1995	IX Congress of Computational Mechanics, Catania
	1994	VIII Congress of Computational Mechanics, Torino
	1993	VII Congress of Computational Mechanics, Trieste
	1991	VI Congress of Computational Mechanics, Brescia
	1990	V Congress of Computational Mechanics, Cosenza
	1989	IV Congress of Computational Mechanics, Padova
	1988	III Congress of Computational Mechanics, Palermo
	1987	II Congress of Computational Mechanics, Roma
	1986	I Congress of Computational Mechanics, Milano

(continued)

Table 10 (continued)

Awards for best Ph.D. thesis	2019	S. Meduri
	2019	V. Diana
	2018	E. Gaburro
	2018	D. Magisano
	2017	F. Fambri
	2017	P. Di Re
	2016	N. Nodargi
	2016	A. Montanino
	2015	D. Grazioli
	2015	W. Boschieri
	2014	G. Scalet
	2013	R. Dimitri

Table 11 AIMETA Group of Stochastic Mechanics (GAMS). Since 1987, founder F. Casciati

Executive committee	A. Pirrotta	University of Palermo
Meetings	2016	Stochastic Mechanics'16, Capri, Napoli
	2012	Stochastic Mechanics'12, Ustica, Palermo
	2008	Stochastic Mechanics'08, Cefalù, Palermo
	2004	Stochastic Mechanics'04, Pantelleria, Trapani
	1998	Stochastic Mechanics'98, Lampedusa, Agrigento
	1993	Stochastic Mechanics'93, Taormina, Messina

Table 12 AIMETA Group of Tribology (GAIT). Since 1988, founder R. Bassani

Executive committee	A. Ruggiero	University of Salerno
	L. Mattei	University of Pisa
	F. Colombo	Polytechnic of Torino
Meetings	2019	7th ECOTRIB, Vienna, Austria
	2017	6th ECOTRIB, Ljubljana, Slovenia
	2015	5th ECOTRIB, Lugano, Switzerland
	2013	4th ECOTRIB, within the 5th World Tribology Congress (WTC), Torino
	2011	3rd ECOTRIB, Vienna, Austria
	2009	2nd ECOTRIB, Pisa
	2007	1st ECOTRIB-European Conference on Tribology, Ljubljana, Slovenia

(continued)

Table 12 (continued)

	2006	5th AITC, Parma
	2004	4th AITC, Roma
	2002	3rd AITC, Vietri sul Mare
	2001	2nd AITC, within the World Tribology Congress (WTC), Vienna, Austria
	2000	1st AITC-AIMETA International Tribology Conference, L'Aquila
	1998	5th AIMETA Tribology Conference, Varenna
	1996	4th AIMETA Tribology Conference, Santa Margherita Ligure
	1994	3rd AIMETA Tribology Conference, Capri
	1993	2nd AIMETA Tribology Conference, Firenze
	1991	1st AIMETA Tribology Conference, Parma

Table 13 Mechanics of Materials (GMA). Since 1994, founder G. Del Piero

Executive committee	L. Bardella	University of Brescia
	M. Paggi	IMT School for Advanced Studies, Lucca
	G. Noselli	SISSA—International School for Advanced Studies, Trieste
Meetings (recent)	2019	GMA 2019—within AIMETA 2019, Sapienza University of Roma
	2018	GMA 2018—within GIMC-GMA 2018, University of Ferrara
	2017	GMA 2017—within AIMETA 2017, University of Salerno
	2016	GMA 2016—within GIMC-GMA 2016, IMT School for Advanced Studies, Lucca
	2015	GMA 2015—within AIMETA 2015, University of Genova
	2014	GMA 2014—within GIMC-GMA 2014, University of Cassino
	2013	GMA 2013—within AIMETA 2013, Polytechnic of Torino
	2012	GMA 2012—Fondazione Campus of Lucca
	2011	GMA 2011—University of Udine
	2010	GMA 2010—University of Palermo
	2009	GMA 09—Polytechnic of Milano
	2008	GMA 08—University of Genova
	2007	GMA 07—University of Trento
Awards for best Ph.D. thesis	2021	D. Agostinelli
	2020	F. Recrosi
	2019	A.S. Barjoui
	2018	P. Lenarda
	2017	E. Cattarinuzzi

Table 14 AIMETA BioMechanics Group (GBMA). Since 1995, founders A. Vallatta, R. Contro

Executive committee	P. Bisegna	University of Roma Tor Vergata
	V. Parenti Castelli	University of Bologna
	G. Pedrizzetti	University of Trieste
Meetings	2019	GBMA Minisymposium "Theoretical and Applied Biomechanics"- within AIMETA 2019, Sapienza University of Roma
	2017	Minisymposium "Theoretical and Applied Biomechanics for Cardiovascular Problems"—within AIMETA 2017, University of Salerno
	2015	Minisymposium "Progresses in Biomechanics: From Fundamentals to Applications"—within AIMETA 2015, University of Genova
Awards for best Ph.D. thesis	2020	F. Regazzoni
	2019	S. Palumbo

Table 15 Kinematics and Dynamics of Multibody Systems (CDSM). Since 2003, founder E. Pennestrì

Executive committee	F. Cheli	Polytechnic of Milano
	D. Guida	University of Salerno
	P. Masarati	Polytechnic of Milano
	C.M. Pappalardo	University of Salerno
	E. Pennestrì	University of Roma Tor Vergata
	A. Tasora	University of Parma
	P. P. Valentini	University of Roma Tor Vergata
	F. Cheli	Polytechnic of Milano
Meetings	2021	3rd International Multibody System Dynamics Workshop & Summer School (online)
	2019	2nd International Multibody Summer School, Parma
	2016	1st Italian Multibody Summer School, Parma

Table 16 AIMETA Group of Dynamics and Stability (GADeS). Since 2012, founder A. Luongo

Executive committee	G. Piccardo	University of Genova
	F. Pellicano	University of Modena and Reggio Emilia
	M. Romeo	University of Genova
Meetings	2019	GADeS 2019—within AIMETA 2019, Sapienza University of Roma
	2018	GADeS 2018—University of Cagliari
	2017	GADeS 2017—within AIMETA 2017, University of Salerno
	2016	GADeS 2016—University of Brescia
	2015	GADeS 2015—within AIMETA 2015, University of Genova
	2014	GADeS 2014—University of Firenze
	2013	GADeS 2013—within AIMETA 2013, Polytechnic of Torino
	2012	GADeS 2012—Sapienza University of Roma
Awards for best Ph.D. thesis	2018	A. Di Matteo
	2016	V. Settimi

Appendix 7: AIMETA Junior Prizes

See Table 17.

Table 17 AIMETA Junior Prizes

Year	Committee	Area	Awardees	Area
2009	M. Pandolfi	President-AIMETA Representative	L. Fusi	General Mechanics
	F. Pastrone	General Mechanics	S. Camarri	Fluids
	E. Virga	General Mechanics	M. Gabiccini	Machines
	P. Luchini	Fluids	L. Bardella	Solids
	A. Sestieri	Machines	S. Vidoli	Structures
	F. Vatta	Machines		
	A. Corigliano	Solids and Structures		
	G. Del Piero	Solids and Structures		
	L. Gambarotta	Solids and Structures		
	G. Muscolino	Solids and Structures		
	E. Sacco	Solids and Structures		
2011	N. Bellomo	General Mechanics	G. Napoli	General Mechanics
	M. Fabrizio	General Mechanics	F. Picano	Fluids

(continued)

Table 17 (continued)

Year	Committee	Area	Awardees	Area
	R. Piva	Fluids	M. Carricato	Machines
	E. Pennestrì	Machines	G. Tomassetti	Solids
	C.U. Galletti	Machines	L. De Lorenzis	Structures
	S. Bennati	Solids and Structures		
	D. Bigoni	Solids and Structures		
	D. Bruno	Solids and Structures		
	A. Carpinteri	Solids and Structures		
	A. Luongo	Solids and Structures		
2013	G. Rega	President-AIMETA Representative	L. Vergori	General Mechanics
	G. Caricato	General Mechanics	M. Dona	Fluids
	G. Spiga	General Mechanics	A. Artoni	Machines
	D. Boffi	General Mechanics	F. Dal Corso	Solids and Structures
	F. Bassi	Fluids	A. Reali	Solids and Structures
	M.V. Salvetti	Fluids		
	F. Sorge	Machines		
	P. Fanghella	Machines		
	P. Bisegna	Solids and Structures		
	A. Morassi	Solids and Structures		
	L. Rosati	Solids and Structures		
	F. Ubertini	Solids and Structures		
	M. Cuomo	Solids and Structures		
2015	S. Lenci	President-AIMETA Representative	I. Bochicchio	General Mechanics
	M. Fabrizio	General Mechanics	S. Cherubini	Fluids
	G. Frosali	General Mechanics	F. Farroni	Machines
	G. Buresti	Fluids	M. Bruggi	Solids
	G. Iuso	Fluids	G. Noselli	Structures
	M. Carricato	Machines		
	B. Allotta	Machines		
	C. Comi	Solids and Structures		
	F. Davì	Solids and Structures		
	G. Giambanco	Solids and Structures		
	A. Paolone	Solids and Structures		
2017	C. Cinquini	President-AIMETA Representative	A. Giacomello	Fluids
	D. Andreucci	General Mechanics	M. Scaraggi	Machines
	M. G. Naso	General Mechanics	A. Amendola	Solids and Structures

(continued)

Table 17 (continued)

Year	Committee	Area	Awardees	Area
	M. Quadrio	Fluids	D. Misseroni	Solids and Structures
	A. Soldati	Fluids		
	E. Ciulli	Machines		
	E. Sabbioni	Machines		
	S. Caddemi	Solids and Structures		
	G. Royer Carfagni	Solids and Structures		
	R. Massabò	Solids and Structures		
	P. Trovalusci	Solids and Structures		
2019	C.M. Casciola	President-AIMETA Representative	I. Carlomagno	General Mechanics
	S. Carillo	General Mechanics	V. Citro	Fluids
	M. Romeo	General Mechanics	C. Putignano	Machines
	R. Verzicco	Fluids	M. Cremonesi	Solids and Structures
	E. Campana	Fluids	M. Marino	Solids and Structures
	A. Collina	Machines		
	A. Trivella	Machines		
	F. Greco	Solids and Structures		
	V. Gusella	Solids and Structures		
	A. Corigliano	Solids and Structures		
	G. Borino	Solids and Structures		

Appendix 8: CISM-AIMETA Advanced Schools

See Table 18.

Table 18 CISM-AIMETA Advanced Schools

Year	Title/Coordinators	Lecturers	Affiliations
2014	Shell-like Structures: Advanced Theories and Applications H. Altenbach V.A. Eremeyev	H. Altenbach	Otto-von-Guericke University, Magdeburg, Germany
		V. A. Eremeyev	Rzeszów University of Technology, Poland
		G. Mikhasev	Belarusian State University, Minsk, Belarus
		P. Podio-Guidugli	Accademia Nazionale dei Lincei, Rome, Italy
		K. Sab	Université Paris-Est, France

(continued)

Table 18 (continued)

Year	Title/Coordinators	Lecturers	Affiliations
		K. Wisniewski	IFTR, Polish Academy of Sciences, Poland
2015	The Art of Modeling Mechanical Systems F. Pfeiffer H. Bremer	H. Bremer	Johannes Kepler Universität Linz, Austria
		F. Pfeiffer	Technical University of Munich, Germany
		M. Raous	Lab. de Mécanique et d'Acoustique, Marseille, France
		A. Shabana	University of Illinois at Chicago, USA
		S. Shaw	Michigan State University, East Lansing, USA
		P. Wriggers	Leibniz Universität Hannover, Germany
2016	Global Nonlinear Dynamics for Engineering Design and System Safety G. Rega S. Lenci	P. B. Goncalves	PUC-Rio, Rio de Janeiro, Brazil
		S. Lenci	Polytechnic University of Marche, Italy
		G. Rega	Sapienza University of Roma, Italy
		J.-Q. Sun	University of California, Merced, USA
		M. Thompson	University of Cambridge, UK
		M. Younis	KAUST, Tuval, Saudi Arabia and Binghamton University, NY, USA
2017	Dynamic Stability and Bifurcation in Nonconservative Mechanics D. Bigoni O. Kirillov	D. Bigoni	University of Trento, Italy
		O. Doaré	ENSTA Paris Tech, France
		E. Hemingway	University of California, Berkeley, USA
		O. Kirillov	Russian Academy of Sciences, Moscow, Russia
		A. Metrikine	Delft University of Technology, The Netherlands
		A. Ruina	Cornell University, Ithaca, USA
2018	Cell Mechanobiology: Theory and Experiments on the Mechanics of Life A. De Simone V. Deshpande	C. Bouten	TU Eindhoven, The Netherlands
		V. Deshpande	University of Cambridge, UK
		A. De Simone	SISSA, Trieste, Italy
		D. E. Discher	University of Pennsylvania, USA

(continued)

Table 18 (continued)

Year	Title/Coordinators	Lecturers	Affiliations
		J.M. Garcia-Aznar	University of Zaragoza, Spain
		R. M. McMeeking	University of California at Santa Barbara, USA
		P. Recho	LIPhy, Grenoble, France
		U. Schwarz	University of Heidelberg, Germany
2019	Anisotropic Particles in Viscous and Turbulent Flows C. Marchioli G. Verhille	J. Butler	University of Florida, Gainesville, USA
		E. Guazzelli	Université de Paris, France
		C. Marchioli	University of Udine, Italy
		F. Picano	University of Padova, Italy
		A. Pumir	ENS de Lyon, France
		G. Verhille	Aix-Marseille University, CNRS, France
		G. Voth	Wesleyan University, Middletown, USA
2020 + 2	Exploiting the Use of Strong Nonlinearity in Dynamics and Acoustics O. Gendelman A.F. Vakakis	B. Cochelin	LMA, CNRS, France
		O. Gendelman	Technion, Haifa, Israel
		G. Kerschen	University of Liege, Belgium
		M. Krack	University of Stuttgart, Germany
		G. Rega	Sapienza University of Roma, Italy
		A. Vakakis	University of Illinois at Urbana-Champaign, USA
		F. Vestroni	Sapienza University of Roma, Italy

Appendix 9: IUTAM General Assembly

See Table 19.

Table 19 Italian representatives

Name	Area	Years	Total
Bianchi G	Machines	1976–2001	26
Bigoni D	Solids/Structures	2015–2021	7
Bottaro A	Fluids	2015–2021	7
Campana E F	Fluids	2015–2018	4
Cercignani C	Fluids	1984–2006	23
Colonnetti O	General Mechanics	1948–1967	20
Crocco L	Fluids	1948–1970	23
De Bernardis E	General Mechanics	2019–2021	3
Ferrari C	Fluids	1970–1975	6
Finzi B	General Mechanics	1966–1969	4
Galletto D	General Mechanics	1976–1993	18
Maier G	Solids/Structures	1976–1983	30
		2000–2021[a]	
Morro A	General Mechanics	2007–2014	8
Napolitano L G	Fluids	1976–1983	8
Podio Guidugli P	Solids/Structures	1994–2014	21
Polizzotto C	Solids/Structures	1987–1997	11
Rega G	Solids/Structures	2009–2021	13
Schrefler B A	Solids/Structures	2012–2014	3
Sestini G	General Mechanics	1973–1975	3
Sobrero L	General Mechanics	1971–1977	7
Supino G	Fluids	1970–1972	3
Vatta F	Machines	1995–2008	14
Villaggio P	Solids/Structures	1984–1986	3

[a] Member-at-Large since 2012

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