



Introduction

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Enrique Arrondo Esteban is a well established and greatly appreciated mathematician. He is Professor Titular at the Department of Algebra, Faculty of Mathematics, of the University Complutense of Madrid. His main field of interest is classical algebraic geometry, in which he has given important contributions, publishing numerous papers that appeared on international journals of great impact. He has been the advisor of various doctoral thesis of young mathematicians. In the days 10–14 of July 2023 the conference “Homemade Algebraic Geometry. Celebrating Enrique Arrondo’s 60th birthday” took place at the University of Alcalá de Henares (Spain), in which several mathematicians from all around the world participated paying a well deserved tribute to Enrique Arrondo and in which well recognised specialists delivered about fifteen talks that covered a great variety of very interesting topics in classical algebraic geometry, including ACM and Ulrich vector bundles, algebraic vision and multiview geometry, apolarity, foliations, Brill–Noether general curves, freeness of projective hypersurfaces, Gröbner’s problem, Lefschetz properties and Perazzo hypersurfaces, modular surfaces, Mori dream spaces, Pfaffian cubic fourfolds and generalizations, triple solids and scrolls. The “Rendiconti del Circolo Matematico di Palermo” decided to dedicate the present special issue to the proceedings of this conference, that include research and expository papers on the subjects treated in the conference.

The issue opens up with the paper by S. Marchesi and A. Tocino, dedicated to Arrondo’s contributions over the whole of his career, recalling his professional history and collecting the results of his mathematical production. Then the issue contains the papers by:

- E. Ballico and M. C. Brambilla, in which the authors study minimally Terracini finite sets of points in the projective plane and prove that the sequence of the cardinalities of minimally Terracini sets can have any number of gaps for degree great enough;
- M. Bertolini and C. Turrini, in which the authors survey a number of interesting results in algebraic vision and multiview geometry;
- D. Faenzi, M. Jardim, J. Vallès, in which the authors extend a criterion of Saito, that characterizes freeness of the module $\text{Der}(f)$ of tangent vector fields along a reduced divisor $V(f)$;
- M. L. Fania, F. Flamini, in which the authors prove that the modular component or certain Ulrich vector bundles on suitable threefold scrolls over Hirzebruch surfaces, is generically smooth, irreducible and unirational;
- A. Lanteri and C. Novelli, in which the main result is that if Y is a smooth complex projective variety of dimension $n \geq 2$ endowed with a finite morphism of degree 3 to

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\mathbb{P}^n , and Y , polarized by some ample line bundle, is a scroll over a smooth variety X of dimension m , then $n \leq 3$ and either $m = 1$ or 2 . The case $m = 1$ is completely classified and the case $m = 2$ is thoroughly discussed;

- E. Mezzetti and R. M. Miró-Roig, in which the authors study Perazzo algebras and their relations with the Lefschetz Property;
- G. Ottaviani, in which the author exposes the fascinating story and properties of vector bundles without intermediate cohomology on interesting varieties.

We hope that this issue will be appreciated by Enrique and we are sure that it will be interesting for all researchers in the field of classical algebraic geometry.

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