

Announcing a Special Issue of

Applied Physics B

Optics and Interferometry with Atoms

Recently there has been significant progress on laser manipulation of atoms, allowing the realization of "optical elements" (mirrors, lenses, beam splitters) for neutral atoms. Moreover, new developments in microfabrication have allowed the construction of free-standing transmission structures that can be used for the efficient diffraction of atoms. Most recently, the first demonstrations of various types of atom interferometers have been reported with fascinating perspectives for matter-wave interferometry. Therefore a special issue of Applied Physics B on atom optics and interferometry seems very timely and will be useful to give an up-to-date status report on this rapidly developing field.

This issue will focus on all experimental and theoretical aspects of research on beam splitters, lenses and mirrors for de Broglie waves of neutral atoms. Subjects include atom optics by light forces, diffraction by microstructures, reflection and diffraction from surfaces, etc., with emphasis on the realization of microscopes and interferometers for atoms. Papers are also solicited on the development of bright and coherent atomic beams for atom optics using, e.g., special laser cooling techniques.

The deadline for submission is

September 30, 1991

and publication is scheduled for February or March 1992. Contributions consisting of an original plus two copies of the manuscript should be submitted directly to one of the guest editors

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