Special Issue

Advances in and Prospects for Matter Wave Interferometry: Second Edition

Message from the Guest Editors

Matter wave interference is one of the defining signatures of quantum mechanics. The field of matter wave interferometry is currently experiencing a surge of advances. For example, atom interferometers that extend over macroscopic scales in space and in time have been developed, and molecular interferometry has been realized with masses in excess of 25,000 amu—corresponding to molecules consisting of more than 2,000 atoms. Ongoing research is progressing toward implementing matter wave interferometry with even more massive objects, such as nanoparticles and Schrödinger cat states consisting of millions of atoms. This Special Issue will include original and review articles on matter wave interferometry, with a focus on recent advances, future prospects, and challenges.

Guest Editors

Dr. Tim Kovachy
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Message from the Editor-in-Chief

The scope of *Atoms* is deliberately wide and encompasses a large part of theoretical and experimental atomic,
molecular, nuclear, and chemical physics in order to encourage cross-disciplinary connections, while supporting the more traditional idea of individual subfields. The journal is also interested in papers concerning
the computation and compilation of data related to applications in the above areas. Details of experimental methods and codes are welcome. Your research is taken seriously and peer-reviewed with care. I encourage you
to contact me or any of the Editorial Board Members for further information.

Editor-in-Chief

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