

Special Issue

Quantum Dynamics and Applications

Message from the Guest Editors

Quantum technologies are a rapidly emerging field. Many countries and large corporations are ramping up their investment in quantum technology, particularly in quantum information processing. However, these systems require extremely fast and precise controls because, over time, quantum systems lose their “coherence”, which refers to the ability to make interference and superposition of states. Maintaining this “coherence” is at the heart of all the mechanisms utilized in quantum technology. Therefore, the key to the further advancement of quantum technology relies on fast and accurate quantum control protocols. However, finding an optimum temporal and spatial dependence of the control field for high-speed manipulations is extremely challenging because fast controls require a strong control field, which can easily cause undesirable perturbation to the system, thus, negating its useful superposition. This Special Issue not only focuses on practical purposes, but also aims to deepen the understanding of the world from the perspective of high-fidelity quantum control. Keywords: Fast and accurate quantum control; Quantum dynamics; Quantum technology

Guest Editors

Prof. Dr. Shumpei Masuda

Dr. Kuan Yen Tan

Prof. Dr. Mikio Nakahara

Deadline for manuscript submissions

closed (15 October 2019)



Universe

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 4.3



mdpi.com/si/21936

Universe
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
universe@mdpi.com

[mdpi.com/journal/
universe](https://mdpi.com/journal/universe)





Universe

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 4.3



[mdpi.com/journal/
universe](https://mdpi.com/journal/universe)



About the Journal

Message from the Editor-in-Chief

The multidisciplinary *Universe* journal is aiming to follow and, hopefully, to lead to the largest extent as possible the ever-self renovating threads which weave mathematical theories with our understanding of the magnificent natural world. On behalf of all the distinguished members of the editorial board, I extend my welcome to this new journal and look forward to hearing from the interested contributors and learning about their valuable research.

Editor-in-Chief

Prof. Dr. Lorenzo Iorio

Ministero dell'Istruzione e del Merito, Viale Unità di Italia 68, 70125 Bari,
BA, Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Astrophysics Data System, INSPIRE, CAPIus / SciFinder, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Astronomy and Astrophysics) / CiteScore - Q2 (General Physics and Astronomy)