

## Special Issue

# Analogue Gravitational Dynamics

### Message from the Guest Editors

Analogue gravity models provide a powerful test-bed for simulating in condensed-matter systems the propagation of fields on curved spacetime geometries and related phenomena, such as, Hawking radiation, superradiance, and cosmological particle production. This Special Issue is intended to collect contributions aimed at exploring this side of the analogy, i.e., focusing on condensed-matter systems and emergent analogue gravitational dynamics, both at the “Newtonian” and “relativistic” levels. Topics of interest include (but are not limited to) massive elementary excitations and back-reaction effects, the emergence of Newtonian and Lorentz invariant gravitational interactions, the geometrization of field dynamics, etc. Both research and review papers are welcomed.

---

### Guest Editors

Dr. Francesco Marino

National Institute of Optics INO, Italian National Research Council,  
Rome, Italy

Dr. Alessio Belenchia

Centre for Theoretical Atomic, Molecular, and Optical Physics, School  
of Mathematics and Physics, Queens University, Belfast BT7 1NN, UK

---

### Deadline for manuscript submissions

closed (31 January 2022)



## Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.5



[mdpi.com/si/62546](https://mdpi.com/si/62546)

*Applied Sciences*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[appls@mdpi.com](mailto:appls@mdpi.com)

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

[appls.c](https://appls.c)





# Applied Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.5



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



## About the Journal

### Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

---

### Editor-in-Chief

Prof. Dr. Giulio Nicola Cerullo  
Dipartimento di Fisica, Politecnico di Milano, Piazza L. da Vinci 32,  
20133 Milano, 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), Ei Compendex, Inspec, Embase, CAPIus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q2 (Engineering, Multidisciplinary) / CiteScore - Q1 (General Engineering )