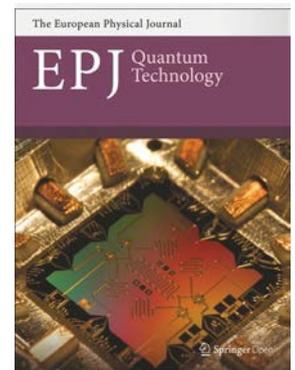


# EPJ Quantum Technology

## Thematic Series on Quantum Simulations

Quantum simulations consist in the intentional reproduction of interesting physical phenomena, usually notoriously difficult to study in the lab and on a computer, onto another quantum system that is typically more accessible and controllable. Most if not all of the real effects occurring in condensed matter and quantum chemistry, or predicted by nuclear physics and the Standard Model, are in this category due to our limited computational capabilities in modeling quantum many body systems. A working quantum simulator is expected to be able to assist in overcoming the above issues by directly reproducing the inner workings of the system itself in a controlled environment. Beyond the fundamental and aesthetic value, a working quantum simulator will also pave the road for important applications in applied disciplines like material science and nanotechnology where perhaps exotic materials with "order-on-design properties" could be fabricated. Quantum simulations is perhaps one of the most active and interdisciplinary research fields today bringing together under one umbrella the state-of-the-art in research in fundamentals of quantum physics, quantum information and quantum technologies, quantum field theories, quantum optics, condensed matter, quantum chemistry, materials science, and quantum biomimetics.



### Topics of interest include but are not limited to:

#### Theoretical aspects of quantum simulations:

- In and out of equilibrium quantum many body systems
- Certification and validation
- Mathematical aspects

#### Quantum interfaces and quantum technologies for quantum simulations:

- Trapped ions
- Neutral atoms in optical lattices
- Propagating and confined microwave and optical photons
- Superconducting and semiconductor platforms

#### Quantum simulations and quantum information processing:

- Quantum information tools for quantum simulations
- Quantum computing and quantum simulation

# Submission Instructions:

Before submission, authors should carefully read over the Instructions for Authors, which are located at [www.epjquantumtechnology.com/authors/instructions](http://www.epjquantumtechnology.com/authors/instructions). Prospective authors should submit an electronic copy of their complete manuscript through the SpringerOpen submission system at [www.epjquantumtechnology.com/manuscript](http://www.epjquantumtechnology.com/manuscript) according to the submission schedule. They should choose the correct Thematic Series in the “sections” box upon submitting. In addition, they should specify the manuscript as a submission to the “Thematic Series on Quantum Simulations” in the cover letter. All submissions will undergo initial screening by the Guest Editors for fit to the theme of the Thematic Series and prospects for successfully negotiating the review process.

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## Submission Schedule

**Manuscripts due:  
December 2013 to  
June 1, 2014**