

Oberseminar Geschichte der Mathematik  
und der Naturwissenschaften

## James Clerk Maxwell's Methodological Odyssey in Electromagnetism: A Philosophical Perspective

**Prof. Ph.D. Giora Hon**  
(University of Haifa)

Vortrag im Rahmen des  
Mainzer Kolloquiums zur Geschichte und Philosophie der Wissenschaften

Veranstalter: R. Busse, M. Kuhlmann, C. Menke, T. Sauer

29.01.2020, 18.15 Uhr, Raum 205 (Philosophicum)

### Abstract:

Einstein (1931): "The greatest alteration in the axiomatic basis of physics — in our conception of the structure of reality — since the foundation of theoretical physics by Newton, originated in the researches of Faraday and Maxwell on electromagnetic phenomena... Since Maxwell's time Physical Reality has been thought of as represented by continuous fields, governed by partial differential equations, and not capable of any mechanical interpretation. This change in the conception of Reality is the most profound and fruitful that physics has experienced since the time of Newton."

We ask, then, What was Maxwell's key to this fundamental change in the conception of Physical Reality? By following closely the trajectory of Maxwell's several contributions to electromagnetism, which we characterize as an odyssey, we uncover one fundamental aspect of this success — innovative methodologies.

Alle Interessierten sind herzlich eingeladen.

Fachbereich 08 – Physik,  
Mathematik und Informatik

Institut für Mathematik

**Univ.-Prof. Dr. Tilman Sauer**  
AG Geschichte der Mathematik  
und der Naturwissenschaften

Johannes Gutenberg-  
Universität Mainz

Staudingerweg 9  
55099 Mainz

Tel. +49 6131 39-22837  
Fax +49 6131 39-24659

tsauer@uni-mainz.de  
www.uni-mainz.de

Sekretariat  
**Natalia Poleacova**  
Raum: 05-525  
Tel. +49 6131 39-23706  
Fax +49 6131 39-24659  
Mail npoleaco@uni-mainz.de