

COLLOQUIUM DFA

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ONLY IN PRESENCE AULA ROSTAGNI

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***Experiments from the history of physics:
are they as simple as they seem?***

Abstract: Some instruments and experiments from the history of physics can be found in practically all textbooks; therefore, they can be described as canonical. Among them are Millikan's oil drop apparatus, Coulomb's and Cavendish' torsion balances or experiments to determine the speed of light. However, the descriptions of these canonical instruments and experiments do not go into any further detail and thus support an image according to which experiments are simple and straightforward (at least for the genius who carried them out).

However, when corresponding experiments are analyzed using the replication method, it quickly becomes evident that this idea is very misleading. Instead, stabilization and the creation of control play an essential role in the experimental process.

In this lecture, selected examples will be used to illustrate the more thorough understanding of physical experimentation and its development that can be created through the replication method.



Peter Heering is full professor of physics and its didactics at the Europa-Universitaet Flensburg since 2009.

Amongst other positions, he was President of the International History, Philosophy, and Science Teaching Group (2013-2015), Vice-President of the Inter-Divisional Teaching Commission of the International Union for the History and Philosophy of Science (2011-2017).

Heering has three major areas of research: experimental history of science, in which he employs the replication method focusing on physics from the 17th to the 19th century, the history of experimental science education, and the implementation of history and philosophy of science in formal and non-formal science education.