Physikalisches Institut
Fakultät für Mathematik und Physik
Albert-Ludwigs-Universität Freiburg

PHYSIKALISCHES KOLLOQUIUM

AM 22. JUNI 2026 UM 16 UHR C.T.
IM GROßEN HÖRSAAL

PRACTICE MATTERS: CANONICAL EXPERIMENTS AND THEIR EDUCATIONAL REPRESENTATIONS

PETER HEERING
EUROPA-UNIVERSITÄT FLENSBURG

When glancing through physics textbooks or catalogues of teaching laboratory suppliers, we find several instruments and experiments from the history of physics: Cavendish's or Coulomb's torsion balance, Millikan's oil drop apparatus or Foucault's rotating mirror experiment that he used to measure the speed of light. However, a just slightly closer look reveals that not very much is told about the historical experiments. And an even closer look reveals – particularly in connection with the analysis of the historical experiments – that we actually do not learn very much about the historical experiments, the motivation of the researcher or why these experiments actually achieved the status they nowadays have.
In my talk, I will use the first part to discuss some of the historical experiments. In doing so, my aim is twofold: On the one hand, I will discuss the scientific practice that can be connected with these experiments, that is, I am going to sketch some of the material and performative requirements that the historical experimenters had to meet in order to come up with the results that are nowadays connected with their work. On the other hand, some aspects of the historical context of these experiments will be presented in order to contextualize them.
In the second part, I am going to discuss these educational representations of these experiments. In doing so, I will show that these are not only simplified, but actually misleading and problematic with respect to developing an understanding about science.