



Beitrag ID: 35

Typ: **Invited Talk**

## **Towards Frequency Metrology and a Quantum Logic Clock for Highly Charged Heavy Ions**

*Donnerstag, 22. Januar 2026 17:40 (20 Minuten)*

The accuracy of optical clocks is unprecedented and the study of highly charged heavy ions in these instruments promises an exceptional robustness against external perturbations in combination with an exceptional sensitivity to fundamental, nuclear, and beyond-Standard-Model physics. To pursue this goal, we are setting up a unique spectroscopy platform at the HITRAP ion trapping facility and as part of the APPA research pillar of FAIR. In this talk, I will outline the underlying scientific motivation, the measurement principle based on full quantum control of single ions, and our R&D activities which involve essential metrological infrastructure that still has to be established.

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**Sitzung Einordnung:** Session 2