TECHNISCHE UNIVERSITÄT
CHEMNITZ

Institut für Physik
Physikalisches Kolloquium

Mittwoch, 20.04.2016, um **16:00 Uhr**

Ort: Reichenhainer Str. 90;
Zentrales Hörsaal- und Seminargebäude,
Raum 2/N013

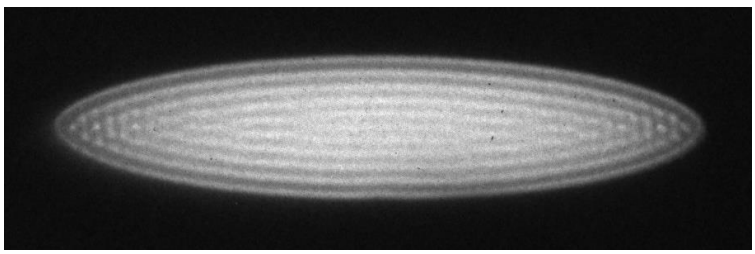
Dr. Martina Knoop

Université d'Aix-Marseille
Physique des Interactions Ioniques et Moléculaires, CNRS

Trapped Ions – from the single atom to the model system

Trapped ions are at the heart of many spectacular advances in recent years, in particular regarding high-resolution spectroscopy. They serve as elementary bricks in atomic clocks, quantum information, and the verification of the variation of fundamental constants. Due to the advanced control of the internal and external degrees of freedom of stored ions, they are perfectly adapted to be used as model systems for quantum and classical problems. Laser cooling and individual addressing, detection, and manipulation of single atoms have paved the way to a large variety of important applications and fundamental experiments.

I will introduce ion trapping techniques, their interest, their advantages, and I'll present some key experiments based on trapped ions – worldwide and those of my group.



Crystal of a few thousand Ca^+ ions stored in a linear trap.

W. Paul, "Electromagnetic traps for charged and neutral particles", Rev. Mod. Phys. 62, 531 (1990)
D. J. Wineland, "Superposition, entanglement, and raising Schrödinger's cat", Rev. Mod. Phys. 85, 1103 (1990)

Alle Zuhörer sind ab 15:45 zu Kaffee und Tee vor dem Hörsaal eingeladen.

Informationen zum Vortrag erteilt:
Prof. Dr. Michael Schreiber, Tel. 0371 531-21910