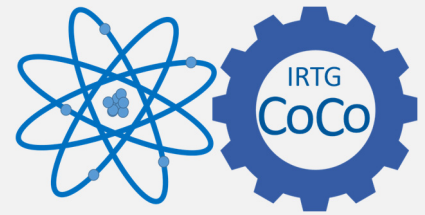


IRTG-Seminar



Carl Schaffer

University of Freiburg (Student talk)

“Deceleration of molecular beams by magnetic fields (Zeeman-deceleration)”

The study of cold molecules is an important field of research for many institutions all around the world. An exceptional challenge is the deceleration of molecules to velocities suitable for analysis and trapping. Zeeman deceleration uses the interaction between a molecule's magnetic dipole moment and external magnetic fields to achieve this task. It offers scalability, flexible tuning of final velocities. It also features a wide range of accessible elements and molecules, especially compared to other established methods. The general concepts behind this technique as well as the experimental realization will be discussed. After describing the relevant parameters and their effects on decelerator performance, substantial successes since the proposition of this method in the late 2000's will be highlighted. These results include substantial deceleration or even trapping of particles ranging from single Hydrogen atoms to molecules as complex as Methyl radicals.

**Tuesday, June 2, 2015, 4:00 p.m., HS II,
Physik-Hochhaus, Hermann-Herder-Str. 3**

Contact: Christiane Földner
IRTG / Cold Controlled Ensembles in Physics and Chemistry
Phone +49 761 203 97666
E-mail : christiane.fueldner@physik.uni-freiburg.de