



31st January 2013 – 10:00 a.m.
CFEL-bldg. 99, seminar room I (EG.076)

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Detection of Lithium atoms from cold collisions

In order to investigate reactive and non-reactive collisions between atoms and molecules at very low scattering energies a magneto-optical trap for ultracold ${}^7\text{Li}$ atoms is combined with a rotating nozzle setup for producing beams of cold molecules. Scattered Li atoms can be detected by means of surface ionization on a hot ribbon, which allows sensitive observation of the differential cross section in backwards direction. The talk discusses the detector and the numerical calculation of quantum-mechanical scattering cross sections for elastic Li-rare gas scattering. The collision dynamics in the studied regime shows rich structure like multiple rainbows and orbiting resonances. Furthermore, first measurements with different atomic beams are presented.

