

**Ben-Gurion University of the Negev
Blaustein Institutes for Desert Research**

The Swiss Institute for Dryland Environmental and Energy Research
Alexandre Yersin Department of Solar Energy and Environmental Physics

Quantum Scattering Resonances in Cold Molecular Collisions

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Abstract

I will discuss our efforts towards reaching ultra-cold temperatures with trapped molecules where molecular beams carrying both cold molecules and atoms have been decelerated and trapped in a permanent magnetic trap. I will present our plans and prospects of further cooling via evaporation or collisions with laser cooled atoms. In the second part of my talk I will focus on cold collisions with cold molecular partners that have been magnetically merged in order to reach collisions temperatures of ~ 10 mK. I will show that quantum phenomena dominates collisions in this cold regime and discuss the importance of molecular degrees of freedom on cold reactions. I will present our latest results where low energy collisions have been imaged using the Velocity Mapping technique allowing us to directly differentiate between quantum scattering resonances formed either by tunneling through or reflection above a potential barrier.

Date & Location:

Tuesday, November 27, 2018, 11:00

Lecture room, Physics Building (ground floor)

