



JOINT QUANTOP/LTC SEMINAR

Title: Ultracold Rb₂ molecules

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Time: Thursday, December 7, at 14.15

Place: 1525-323

Abstract:

I will present two approaches for creating ultracold Rb₂ molecules, which we studied experimentally with our Rb BEC setup in Innsbruck.

First, we performed two-color photoassociation in a BEC. As a remarkable feature we observed an atom-molecule dark state, which is a coherent superposition state of a Rb BEC and a degenerate gas of Rb₂ molecules

In a second approach we used a magnetic Feshbach resonance to create a pure ensemble of Rb₂ molecules. By using a 3D optical lattice we avoided losses of the molecules due to inelastic collisions and achieved long lifetimes and a near unit conversion efficiency.

Michael Budde