



THE CHINESE UNIVERSITY OF HONG KONG  
*Department of Physics*  
SEMINAR

# Dipolar Collisions between Ultracold Polar Molecules

*by*

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*Time: 1:30 - 2:30 p.m.*

*Place: LG23, Science Centre North Block, CUHK*

ALL INTERESTED ARE WELCOME

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## Abstract

The successful production of near quantum degeneracy gas of polar molecules has paved the way for studying ultracold chemistry and quantum gases with strong, long-range and anisotropic interparticle dipolar interactions. Using our ultracold sample of fermionic KRb molecules, we have observed quantum threshold law governed collisions via p-wave scattering followed by near-unity probability short range chemical reactions. By tuning the dipolar interactions with external electric fields, we have been able to modify the rate of these collisions dramatically. In addition, we directly observe the spatial anisotropy of the dipolar interactions manifested in measurements of the thermodynamics of the dipolar gas.

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