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Molecules and Reactions at Micro-Kelvin Temperature

Chemical reactions occurring at ultracold temperature may seem counter-intuitive at first glance. However, reactions can proceed efficiently because the quantum waves associated with molecules can penetrate classically forbidden reaction barriers and the low velocity of the molecules allows long interaction times. I will present how we prepare molecules at micro-Kelvin temperature and the surprising evidence of a four-center reaction ($2 \text{KRb} \rightarrow \text{K}_2 + \text{Rb}_2$) where the reaction rate depends on the quantum statistics of the molecules. I will also outline several open questions regarding the four-center reaction that we hope to answer in the near future.

Monday, April 11, 2016

4:00 P.M.

2033 Young Hall