

## **Is the low-energy limit of inelastic collisions well understood?\***

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It is generally believed that endothermic cross sections in slow ion-atom collisions decrease exponentially with inverse collision velocity ( $1/v$ ). Recent experimental works have suggested that this conviction needs to be amended. However, no compelling theoretical evidence has heretofore been presented. We show that cross sections change their behavior for decreasing velocity from an exponential law to a power law and we identify the origin of these dependences. Clear confirmation of these predictions is observed in the numerical solution of the Schrodinger equation for a model 1D collision system with an internuclear distance whose evolution in time simulates the 3D system trajectory.

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