Abstract Submitted
for the DAMOP09 Meeting of
The American Physical Society

Geometric phase driven predissociation: Lifetimes of $2^2A'$ levels of H_3[1] JUAN BLANDON, VIATCHESLAV KOKOOULINE, University of Central Florida — We discuss the role of the geometric phase in predissociation dynamics of vibrational states near a conical intersection of two electronic potential surfaces of a D_{3h} molecule. For quantitative description of the predissociation driven by the coupling near a conical intersection, we developed a method for calculating lifetimes and positions of vibrational predissociated states (Feshbach resonances) for X_3 molecule. The method takes into account the two coupled three-body potential energy surfaces, which are degenerate at the intersection. As an example, we apply the method to obtain lifetimes and positions of resonances of predissociated vibrational levels of the $2^2A'$ electronic state of the H_3 molecule. The three-body recombination rate coefficient for the H+H+H $\rightarrow$ H_2+H process is estimated.

[1]NSF under Grant No. PHY-0427460 for an allocation of NCSA and NERSC supercomputing resources (project # PHY-040022), and McKnight Doctoral Fellowship

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Date submitted: 22 Jan 2009 Electronic form version 1.4