Geometric phase driven predissociation: Lifetimes of $2^2A'$ levels of $\text{H}_3$ $^1$ JUAN BLANDON, VIATCHESLAV KOKOULINE, 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 $\text{H}_3$ molecule. The three-body recombination rate coefficient for the $\text{H}+\text{H}+\text{H} \rightarrow \text{H}_2+\text{H}$ process is estimated.

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