

Abstract Submitted
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Towards Stimulated-Force Slowing of SrF Molecules EUSTACE EDWARDS, DANIEL MCCARRON, DAVID DEMILLE, Yale University — In recent years, the techniques of laser slowing, cooling, and trapping have been applied to diatomic molecules. However, when applied to molecules the scattering force is reduced relative to the familiar case of atoms, due to additional states in the optical cycle (associated with rovibrational branching). Various schemes can circumvent this problem by applying optical forces without the need for spontaneous emission. This project examines the use of such methods (such as the bichromatic force, optical Stark deceleration, etc.) to slow a beam of diatomic molecules. Since the change in velocity due to these stimulated forces increases with the laser intensity and the interaction time, a tunable, high energy, long pulse laser has been developed. This poster will present the current progress of the project.

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