THE MOLECULAR COILGUN AND SINGLE PHOTON COOLING: TOWARDS ULTRA-COLD MOLECULES

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We report the stopping of a molecular beam of oxygen using a series of pulsed electromagnetic coils. This molecular coilgun can be used stop and trap any paramagnetic molecules at temperatures of the supersonic expansion. Further cooling of molecules near the single photon recoil limit can be accomplished with the method of single photon cooling as was recently demonstrated in our group with atoms. The application of these methods to cold chemistry will be discussed.