COLLISION EXPERIEMNTS UTILIZING TRAPPED NEUTRAL OH MOLECULES

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Using a novel magnetic quadrupole trap based on strong permanent magnets, we trap a 70 mK sample of ground-state OH molecules produced by a Stark decelerator. The trap center lies only 1 cm from the decelerator exit which enables a trapped molecule density of 10^6 cm^{-3}. Our magnetoelectrostatic trap (MET) design allows for the addition of an electric field of variable magnitude to the trapped sample to facilitate polar-molecule collision studies. We report progress toward collisional studies between trapped OH molecules and different atomic and molecular beams.