

Abstract Submitted
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Cold Cs Rydberg Atom Collisions: Line Shifts, Broadening and Inelastic Processes K. RICHARD OVERSTREET, JONATHAN TALLANT, JEFF CRAWFORD, ARNE SCHWETTMANN, JAMES P. SHAFFER, University of Oklahoma Dept. of Physics and Astronomy 440 W Brooks St Norman, OK 73019 — Results of collision experiments involving Cs atoms excited to Rydberg states will be presented. We report observations of the onset of dipole-dipole interactions by measuring spectral line broadening and line shift. The results are compared to a static line broadening theory appropriate for weak long range interactions. Experiments on resonant inelastic collisions between Rydberg atoms, $89D + 89D \rightarrow 90P + 89D$, will also be described. The inelastic collisions are studied by measuring photofragment velocity distributions.

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