Li$_2$ – Li reactive collisions at high initial j

MARK ROSENBERRY, Siena College, RAMESH MARHATTA, BRIAN STEWART, Wesleyan University — Inelastic molecular collisions are a fundamental process in astronomy and chemistry. We are studying collisions of $^7$Li$_2$ with $^7$Li in a heat pipe oven, and looking for nuclear parity-changing events that signal a chemical reaction. Previous work in our group studied such reactions for low initial j; we are now working to collect data for the case of high initial j, where quasi-resonant phenomena occur. We have also incorporated new corrections for multiple collisions in our analysis. Quasi-classical trajectory calculations are used to model these reactions and extract physical insight.