A SPECTROSCOPIC CHARACTERIZATION OF THE LiOLi MOLECULE

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The LiOLi molecule, synthesized and cooled in a supersonic expanding jet, has been probed via various laser spectroscopic techniques. Laser induced fluorescence (LIF) and resonant two-photon ionization (R2PI) experiments yield rotationally resolved vibrational bands of the A $^1B_1$ - X $^1\Sigma_g^+$ (0,0,0) perpendicular transition. Analysis of the rotational band contours provide effective rotational constants (A', B', C') which provide an estimate of the upper state geometry. Additionally, the linear ground state of the LiOLi molecule has been characterized by dispersed fluorescence and stimulated emission pumping techniques.