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.