

VIBRATION-ROTATIONAL-TUNNELING ( $\Pi_{1_0, n=0}$ ) $\leftarrow$ ( $\Sigma_{0_0, n=0}$ ) TRANSITION IN Ar·ND<sub>3</sub>

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A vibration-tunneling-rotation transition in the Ar·ND<sub>3</sub> complex has been observed using the previously reported<sup>a</sup> Pulsed Jet Fast Scan Submillimeterwave Spectrometer . The spectrum was assigned as rotational lines belonging to ( $\Pi_{1_0, n=0}$ ) $\leftarrow$ ( $\Sigma_{0_0, n=0}$ ) vibrational transition, corresponding to activation of hindered rotation of the monomer in the complex with zero quanta of van der Waals' stretch in each state. An analysis of the rotational and quadrupole structure is presented. The implications of the new measurements for the potential energy surface of the complex will be discussed.

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<sup>a</sup>D.Melnik, S.Gopalakrishnan, T.A.Miller, and F.C.De Lucia, 54<sup>th</sup> International Symposium on Molecular Spectroscopy, June 99