

MM-WAVE ROTATIONAL SPECTRUM OF METHYL NITRATE

JESSICA THOMAS, IVAN MEDVEDEV, *Department of Physics, Wright State University, Dayton, OH, USA*; DAVID DOLSON, *Department of Chemistry, Wright State University, Dayton, OH, USA*.

Methyl nitrate (CH_3NO_3), is a toxic liquid known for its explosive properties. It is metabolically expressed in trace amounts in exhaled human breath and is a potential candidate for interstellar detection. Previous microwave studies of methyl nitrate have yielded a handful line transitions in its vibrational ground state in the 8-34 GHz range. This paper discusses the high-resolution spectrum of methyl nitrate in 210-270 GHz range, and extends the spectroscopic assignment of its rotational transitions in the ground and first excited vibrational states.