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$_3$NO$_3$), 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.