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Optical Properties of Aqueous Solutions Present in Planetary Atmospheres Determined from Laboratory Attenuated Total Reflection (ATR) Measurements BHUWAN GHIMIRE, KENT F. PALMER, BESJANA NIKOCI, KRISTEN THURMAN, Department of Physics and Mathematical Sciences, Westminster College, Fulton, MO — Liquid aqueous solutions (e.g. sulfuric acid solutions) appear as droplets in the Earth's atmosphere and in other planetary atmospheres. Their presence affects the transfer of radiation within the atmosphere and has the potential to alter a planet's climate. We present the infrared optical constants of several aqueous solutions obtained from ATR intensity measurements using a Fourier transform infrared spectrometer (FTIR). We discuss the experimental procedures used to reduce errors caused by the partial polarization of the spectrometer beam due to mirror reflections.

Bhuwan Ghimire
Department of Physics and Mathematical Sciences,
Westminster College, Fulton, MO

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