

RAMAN SCATTERING CROSS SECTIONS IN GASES MEASURED WITH UV ARGON
LASER EXCITATION

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ABSTRACT

The Raman scattering cross sections of gases which occur as pollutants in the atmosphere are measured in the near UV using the lines at 351.1 and 363.8 nm of an argon ion laser giving a power of several hundred mW in each of these lines. The data shall be used as a basis for concentration measurements in Raman lidar experiments. The experimental procedure is described. Results for CO, HCl, H₂S, NH₃, C₆H₆ (benzene) and other gases will be presented. Simultaneous measurements at the visible argon laser lines allow a comparison with the results of other groups. Preliminary results for SO₂ (the measurements are rendered difficult by photochemic decomposition of this gas) indicate a slight pre-resonance Raman effect in the near UV.