INVESTIGATION OF THE 19.5 CM^{-1} BAND IN BENZENE-D_2O

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The spectrum of benzene-D_2O has been Previously Investigated At Low Resolution Using Mass-Selective, Ionization-Loss Stimulated Raman Spectroscopy Tunable Far Infrared Laser (TuFIR) Spectroscopy[B]. Some Of The Raman Active Bands Have Been Assigned By Direct comparison to high resolution spectra. However, the nature of the band centered about 19.5 cm^{-1} remains unknown. By fitting high resolution rotational lines in this region to a Hamiltonian using *l* -type doubling terms, it is seen that this motion is a bending mode, perpendicular to the symmetry axis, that is at least doubly degenerate. By direct comparison of the TuFIR and Raman data, it is possible to definitively confirm this assignment.

[a] P. Maxton, M. Schaeffer, and P. Felker, Chem. Phys. Lett. 176, 603, 1995a.
[b] Sakae Suzuki, Ph.D Thesis, California Institute of Technology.