THE ROTATIONAL SPECTRUM OF THE PYRROLE-AMMONIA COMPLEX

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The rotational spectrum of the weakly bound pyrrole-ammonia complex has been observed in the frequency range from ca. 3 to 14 GHz using molecular beam Fourier transform microwave (MB-FTMW) spectroscopy. The assignment of the spectra of two isotopomers (pyrrole-$^{15}NH_3$ and pyrrole-$^{14}NH_3$) was facilitated by initial *ab initio* predictions. Tentative assignments from broadband scans were finally confirmed with application of a novel double resonance technique.
A total of about 15 *a*-type rotational lines for each isotopomer was observed, exhibiting hyperfine structures due to ^{14}N nuclear quadrupole coupling. From the spectra, rotational and centrifugal distortion constants as well as ^{14}N nuclear quadrupole coupling constants were derived. The results are presented and discussed.