ROTATIONAL SPECTRA OF THE Kr-H_2O VAN DER WAALS COMPLEX

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Rotational spectra of the Kr-H_2O van der Waals complex were measured between 4 and 19 GHz using a pulsed jet cavity Fourier transform microwave spectrometer. The isotopomers studied include those of H_2O, HDO, D_2O, $H_2{}^{17}O$, and $H_2{}^{18}O$ with 6 different isotopes of Kr. Tunnelling splittings were observed for all isotopomers with the exception of Kr-HDO. Transitions of complexes with ^{83}Kr, D_2O, HDO, and $H_2{}^{17}O$ showed nuclear hyperfine structure due to the quadrupole moments of ^{83}Kr, D, and ^{17}O, respectively. Rotational and centrifugal distortion constants were determined and used to calculate structural parameters.