ROTATIONAL SPECTRA OF THE Kr-H$_2$O VAN DER WAALS COMPLEX

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Rotational spectra of the Kr-H$_2$O 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$_2$O, HDO, D$_2$O, 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$_2$O, 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.