THE TORSION-ROTATION SPECTRUM OF D_2O_2

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The torsion-rotation spectrum of D_2O_2 has been recorded in the region from 25 to 600 cm^{-1} at a resolution (1/MOPD) of 0.003 cm^{-1} using a modified Bomem Fourier transform spectrometer. The aim of the study is to improve the torsional potential of D_2O_2 and to locate the weak oxygen-oxygen stretching fundamental which should lie amongst the torsional levels. So far, the pairs of torsional levels with $n = 0$, 1 and 2 and one of the levels with $n = 3$ have been analysed with J and K values up to 30 and 11 respectively. The current state of the analysis will be described.