TERAHERTZ VIBRATION-ROTATION-TUNNELING (VRT) SPECTROSCOPY OF THE WATER TRIMER $(D_2O)_3$: COMPLETE CHARACTERIZATION OF THE 2.94 THZ TORSIONAL BAND ($k^n = \pm 2^1 \leftarrow 0^0$)

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We report the complete measurement and analysis of the perpendicular $k^n = \pm 2^1 \leftarrow 0^0$ $(D_2O)_3$ torsional band with an origin of 2940.9376(3) GHz. The upper state is the highest torsional state yet observed. All previously known torsional transitions were included in a new global analysis of the six observed torsional bands, using the effective Hamiltonians derived by van der Avoid et al.