EXPERIMENTAL ENERGY LEVELS OF $HD^{18}O$ AND $D_2{}^{18}O$

S.N. MIKHAILENKO, O.V. NAUMENKO, S.A. TASHKUN, *Laboratory of Theoretical Spectroscopy, V.E. Zuev Institute of Atmospheric Optics, 634055, Tomsk, RUSSIA*; A.-W. LIU, S.-M. HU, *Hefei National Laboratory for Physical Sciences at Microscale, University of Science and Technology of China, Hefei, CHINA*.

Extended sets of experimental energy levels of $HD^{18}O$ and $D_2{}^{18}O$ have been obtained as the result of the analysis of recent high-resolution spectra [a, b] and previously reported data [c,d,e,f,g,h,i,j] Spectra of the enriched by deuterium and oxygen-18 water samples were recorded with a Bruker IFS 120HR spectrometer at room temperature in the 1000 - 9200 cm^{-1} range [a,b] for this purpose. The RITZ code [h] was used for analysis of the rotation-vibration transitions and the energy levels determination.
New energy levels as well as comparison with previous experimental and theoretical studies will be presented.
This work was supported by Grant nos. 06-03-39014 and 10-05-91176 of RFBR (Russia) and by Grant nos. 20903085 and 10574124 of NSFC (China). Work of SNM and SAT was also partly supported by CRDF (USA) Grant RUG1-2954-TO-09 and by RFBR. Grant 09-05-92508.

---

[a] A.-W. Liu et al., J. Mol. Spectrosc. 237, 149-162 (2006).
[b] H.-Y. Ni et al., Mol. Phys. 106, 1793-1801 (2008).
[c] J. Bellet et al., J. Mol. Spectrosc. 47, 388-402 (1973).
[d] J.W.C. Johns, J. Opt. Soc. Am. B2, 1340-1354 (1985).
[e] R.A. Toth, J. Mol. Spectrosc. 162, 41-54 (1993).
[f] W.F. Wang et al., J. Mol. Spectrosc. 176, 226-228 (1996).
[g] R.A. Toth, J. Mol. Structure, 742, 49-68 (2005).
[h] S.N. Mikhailenko et al., JQSRT, 110, 597-608 (2009).
[i] A. Liu et al., JQSRT, 110, 1781-1800 (2009).
[j] O.V. Naumenko et al., JQSRT, 111, 36-44 (2010).