A ROTATIONAL STUDY OF D-MANNOSE AND D-GALACTOSE

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The rotational spectrum of two aldohexoses, D-mannose and D-galactose, has been investigated in the 6 – 12 GHz frequency range by means of a combination of laser ablation and broadband Fourier transform microwave spectroscopy (CP-FTMW).[a, b] Five conformers of α-D-mannopyranose and two of α-D-galactopyranose, showing the $^4C_1$ ring configuration, have been identified from the rotational constants in conjunction with *ab initio* computations. Stabilization factors, which include stereolectronic effects, such as anomeric effect or gauche effect, and the network of clockwise or anticlockwise hydrogen bonds have been analyzed in terms of the observed conformers.

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[b] S. Mata, I. Peña, C. Cabezas, J. C. López, J. L. Alonso, *J. Mol. Spectrosc.* **2012**, *280*, 91.