A ROTATIONAL STUDY OF INTERSTELLAR ACETOHYDROXAMIC ACID, A GLYCINE ISOMER

MIGUEL SANZ NOVO, IKER LEÓN, SANTIAGO MATA, JOSÉ L. ALONSO, *Grupo de Espectroscopia Molecular, Lab. de Espectroscopia y Bioespectroscopia, Unidad Asociada CSIC, Universidad de Valladolid, Valladolid, Spain*.

The study of not only amino acids but its most essential isomers should be of crucial importance for revealing the chemical processes that may have led to life's origin. We here report the first structural characterization of acetohydroxamic acid ($CH_3CONHOH$), a glycine isomer, using a battery of state-of-the-art rotational spectroscopic techniques in the time domain. The ^{14}N nuclear quadrupole hyperfine structure and the A-E splittings due to the internal rotation have been observed and analyzed. Hence, a precise set of the rotational spectroscopic parameters have been determined for the two distinct structures, Z-amide and E-amide acetohydroxamic acid, which is the initial and prerequisite step of its radio astronomical search in low-frequency regions.

- **Acknowledgments:** The authors thank the financial fundings from Ministerio de Ciencia e Innovacion (CTQ2016-76393-P and PID2019-111396GB-I00), Junta de Castilla y Leon (VA077U16 and VA244P20) and European Research Council under the European Union's Seventh Framework Programme (FP/2007-2013) / ERC-2013-SyG, Grant Agreement n. 610256 NANOCOSMOS, are gratefully acknowledged. M.S.N. acknowledges funding from the Spanish "Ministerio de Ciencia, Innovación y Universidades" under predoctoral FPU Grant (FPU17/02987).