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## Water vapor isotopologues ( $\text{H}_2^{16}\text{O}$ , $\text{H}_2^{18}\text{O}$ and $\text{HD}^{16}\text{O}$ ) by ground-based FTIR spectroscopy in central Mexico

**Alain Zuber**<sup>1</sup>, Wolfgang Stremme<sup>1</sup>, Adolfo Magaldi<sup>1</sup>, Michel Grutter<sup>1</sup>, Caludia Rivera<sup>1</sup>, Alejandro Bezanilla<sup>1</sup>, Noemie Taquet<sup>1</sup>, Thomas Blumenstock<sup>2</sup>, Frank Hase<sup>2</sup>, and Matthias Schneider<sup>2</sup>

<sup>1</sup>Centro de Ciencias de la Atmósfera, Universidad Nacional Autónoma de México, Mexico City, Mexico

<sup>2</sup>Institute of Meteorology and Climate Research, Karlsruhe Institut of Technology, Karlsruhe, Germany

Knowledge about water vapor isotopologues is a useful tool in the study of the hydrological cycle. Total columns of water vapor isotopologues ( $\text{H}_2^{16}\text{O}$ ,  $\text{H}_2^{18}\text{O}$  and  $\text{HD}^{16}\text{O}$ ) are measured by ground-based solar absorption FTIR spectroscopy at Altzomoni (3985 m.a.s.l, 19.12°N, 98.66°W), a high altitude subtropical remote background site in central Mexico (Barthlott et al., 2017). In the contribution we present the time series of the isotopic composition of water vapor columns and profiles above central Mexico and analyze differences in the isotopic ratios of  $\text{H}_2^{16}\text{O}$ ,  $\text{H}_2^{18}\text{O}$  and  $\text{HD}^{16}\text{O}$  between the rain and dry seasons of the year: in the rain season, changes in the isotopic ratios might be dominated by the diurnal cycle, which correlates with the relative humidity, temperature and dew point, while isotopic ratio in the dry season might depend more on the origin of the air parcels and transportation. We discuss the hydrological cycle in central Mexico using the relationship between light and heavy isotopes, and how this relationship gives valuable information about the pathways, sources and transport.