



## **Spatial distribution of Oxygen-18 and Deuterium in precipitation in Morocco**

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Stable isotopes of hydrogen and oxygen are being increasingly used in a variety of applications in the fields of earth's water cycle and climate changes. Such studies require that the isotopic composition of precipitation be known. In this work we report the first national-level survey of  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  in precipitation, including results from 7 stations distributed across the north and centre of Morocco where  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  were measured monthly and daily from 1994 until now. Results allow determining the Local Meteoric Water line (LMWL) for each station and a map of spatial variability of  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  using ArcGIS. The result shows that the distance of the station from the sea (Atlantic and Mediterranean) and the altitude are the main factors influenced in the isotopic composition of precipitation. Those LMWLs and maps will provide a valuable contribution for future studies that use stable isotopes.