

The factors that condition the isotopic composition of rain in northern Chile

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Oxygen ($\delta^{18}\text{O}$) and hydrogen ($\delta^2\text{H}$) isotope analyses of rainfall from the Eastern Cordillera are available from different studies and times. These studies concentrate in the Bolivian watersheds and Chilean Altiplano. There is a general lack of rainfall isotope characterization in the Western Cordillera, with only few studies concentrated in Chilean watersheds of the Region of Tarapacá.

The present study compiles the existing rainfall, surface water and groundwater $\delta^{18}\text{O}$ and $\delta^2\text{H}$ isotope data published from the Central Andes from 1982 to 2018. Our aim is to characterize the seasonal and spatial water isotope variations across the Central Andes. Our preliminary findings from the north Chilean Western Cordillera (latitude 18°N to 24°N , elevation $>3000\text{ m a.s.l.}$) includes the observation that the rainfall is enriched in heavier isotopes towards higher latitudes (average $\delta^{18}\text{O}$ -14‰ and $\delta^2\text{H}$ -99‰ at 18°S to average $\delta^{18}\text{O}$ -10‰ and $\delta^2\text{H}$ -69‰ at 24°S).