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PALEOPRECIPITATION CHANGES IN EASTERN ANDES OF COLOMBIA IN THE LAST 5500 YEARS B.P.

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In tropical and subtropical regions, the interpretations based on values of $\delta^{18}\text{O}$ in speleothems are applied to the study of variations in rainfall, due to the consistent relationship between the isotopic composition of rainfall and rainfall variations. The reconstruction of paleoprecipitation based on isotopic analysis of speleothems show that during the Holocene there were abrupt changes of rainfall intensity, which has been analyzed for different areas in the tropics, showing variations in the ITCZ in the last thousands of years. However, the patterns of the Colombian Andes paleoprecipitation has not yet been analyzed due to the lack of isotopic records. This study is based on $\delta^{18}\text{O}$ isotope ratios of stalagmites CAR1, CAR2 and CAR3, those were collected in the region of the Colombian Andes (6°N), these samples were dated by method $^{230}\text{Th}/^{234}\text{U}$ and have high growth rates that allowed obtaining records of isotopes in annual temporal scale for the last 300 years, two years to 3500 years B.P. and eight years to 5500 years B.P., obtaining a total of 1617 isotopic data. The cavern studied is located at 2500 meters above sea level in the northern region of the Colombian Andes where rainfall is influenced by the Intertropical Convergence Zone, and has an annual rainfall of 2300 mm per year. Variations in isotopic ratios of the samples have large amplitude and changes during the period corresponding to Medieval Climate Anomaly and Little Ice Age, during the Late Holocene. Moreover, comparisons were made from the isotopic new record speleothems and other tropical logs, as the Cariaco Basin (Venezuela), are being used in the reconstruction of variations in ITCZ during the Holocene.