Atipically heavy isotope composition of Carbon and Oxygen in calcareus sinters from the Cordillera Orientale, Andes, Argentina

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We studied stable isotope composition of secondary carbonates from Calchaqui valley, Cordillera Oriental (Argentina). These sediments formed sinter-like calcareous beds up to 0.2 m tick. U-series dating of these sediments indicated ages 15.0-8.0 kyr. The stable isotope of carbon and oxygen exhibited atypically enrichment in heavy isotopes: $\delta^{13}C$ = +3‰ till +5‰ and $\delta^{18}O$ = +2‰ till +4‰, which is significantly higher than in Pleistocene and Holocene secondary carbonates in the region [1]. We considered several hypotheses of such isotope geochemistry: (1) very low crystallization temperatures, (2) unusual isotopic composition of parental water, or (3) relatively high evaporation.

The strongest excursions from mean isotope composition (lower $\delta^{13}C$ and higher $\delta^{18}O$) were dated on 11.0-10.3 kyr (Younger Dryas) and 9.0-8.2 kyr ('8.2-episod') indicating cooler and humid climate in these periods.

[1] Gibert *et al* (2009) *Jour. Sed. Res.* **79**, 554-567.

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