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**Paleoclimate Record from Speleothem : Carbon and Oxygen isotope variation in a stalagmite from the Sahastradhara cave, Uttarakhand Lesser Himalaya, India**

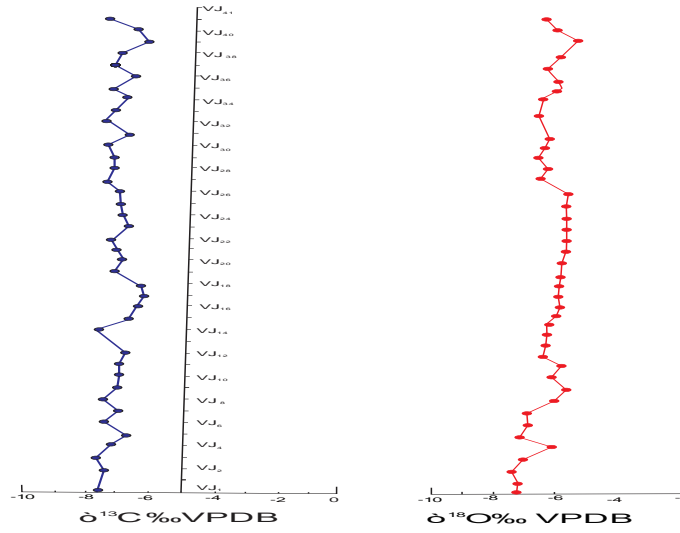
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The high resolution carbon and oxygen isotopic composition of speleothem (stalagmite) from the Sahastradhara cave, Dehradun, Uttarakhand, Lesser Himalaya, India is being recorded. Isotopic measurements from a 9.2 cm high stalagmite from Sahastradhara cave allowed us the reconstruction of the monsoon precipitation, paleoclimate and past vegetation. Stalagmites are widely formed in the global continental environment (caves) and very useful in accurate dating by microlamination counting and uranium series dating for exact paleoclimatic interpretations. In the present paper we are discussing the oxygen and carbon isotope ratio variation in stalagmite with focus on intensity of monsoon precipitation, paleoclimate and past vegetation. The increase in rainfall is indicated by the lighter values of the oxygen isotope ratio and decrease in the carbon isotope ratio in the studied stalagmite and shown in the figure below. We have reported a highly depleted  $\delta^{18}\text{O}$  ( - 7.83 ‰ VPDB ) in the present study from a 9.2 cm high stalagmite from the Sahastradhara cave. In the earlier studies [ 1 ] also, less negative  $\delta^{18}\text{O}$  values ( - 4.58 ‰ V-PDB to - 5.14 ‰ V-PDB ) have been recorded in the Himalayan speleothems from the Uttarakhand and the Meghalaya, NE India. The carbon isotope  $\delta^{13}\text{C}$  ratio of the present stalagmite from the Sahastradhara cave show much lighter signal ( -8.02 ‰ VPDB ). The lighter  $\delta^{13}\text{C}$  values in the stalagmites generally suggest a wet and cool climate.



[1] Tewari V.C.( 2011) Jour. Indian Geol. Cong.,3 (1), 87- 104.

