



## **S and Mg as paleoclimatological proxy in a speleothem of a coastline cave in the Northwest Iberian Peninsula**

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We report a paleoclimatological study of Northwest Spain using “Paz”, a stalagmite collected in the Cave of Pindal (Asturias) located about 10m from the Cantabrian Sea. We describe trace element and isotopic results from a growth phase between 9000BP and 450 BP according U/Th dates. The average growth rate in “Paz” is 27 microns/year, but between 3500 and 2000 BP it had a much slower growth (2 microns/year). LA-ICPMS and solution-based ICP-MS reveal significant correlations between Mg/Ca, Ba/Ca, Sr/Ca, U/Ca and S/Ca which we interpret as resulting from variations in PCP and hydrologically-influenced changes in dissolution mechanism. A strong maximum in Mg/Ca centered on 5.2 ka BP, coupled with enrichments in several other trace/Ca ratios, is suggestive of a period of dryer conditions with higher PCP. Carbon isotopes are correlated with Mg/Ca, most markedly during a series of brief excursions to higher Mg/Ca and carbon isotope ratios. However, the correlation is suppressed across the 5.2 ka event, potentially consistent with a change in dissolution mechanism.