Chemical weathering of the West African Craton during the EOT : a Li and Sr isotopic approach

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Our goal is to extract, from the oceanic sediment record, information constraining mechanical and chemical erosion rates on the continent at geological time scales. The main hindrance in the estimation of past continental denudation rates is the lack of preservation of products linked to chemical erosion. This implies that the climate-weathering modelling community is missing an important component in their evaluations of past biogeochemical cycles.

The West African Craton (WAC) experienced alternating phases of chemical-dominated and mechanical-dominated weathering during the Cenozoic and has undergone major drainage reorganizations during the Eocene-Oligocene-Transition (EOT, *circa* 33 Ma). It therefore constitutes a prime target to study these processes. To decipher the type of weathering on the continent, we measured alteration isotope systems, Sr and Li, on both clay minerals and bioprecipitated carbonates of sediments from the ODP Leg 159, located off-shore of the Ivory Coast margin. The $^{87}Sr/^{86}Sr$ measured in the carbonates are significantly less radiogenic than the global Atlantic $^{87}Sr/^{86}Sr$ seawater signal at the time. This suggests a contribution of the continental weathering to the Sr signal, as recently evidenced for marine carbonate skeletons in the neritic domain worldwide. To further constrain the sources and the fluxes of that continental input, we will focus on the mineralogical associations of the clay fraction and assess its Li and Sr isotope signal.