

Paleoenvironmental research at AMGC

Paleoenvironmental changes are documented at different temporal and spatial scales. Short and/or long-term effects of these modifications on the Global Earth System are characterized in the variations of biogeochemical tracers, aka proxies. These proxies reflect the specific environmental conditions present at their formation and can be used to elucidate factors triggering or resulting the paleoenvironmental change. The geological record traces the evolution of these changes through time, providing an extra dimension missing from the modern data, which can be highly useful for understanding modern environmental change.

At Analytical, Environmental and Geo- Chemistry we use a series of tracers such as elemental concentrations (Cd, Pb, PGE etc.) and isotopic ratios (D/H, $^{18}\text{O}/^{16}\text{O}$, $^{13}\text{C}/^{12}\text{C}$, $^{15}\text{N}/^{14}\text{N}$, $^{87}\text{Sr}/^{88}\text{Sr}$). They are measured on a range of substrates (e.g. meteorites, minerals, fossils, mussel-shell, teeth, seawater, plankton, ice cores etc.) to infer specific environmental parameters (such as condition of formation, temperature, acidity, salinity, CO_2 level, composition, bio-productivity etc.). To address the scientific questions, innovative analytical procedures are continuously being developed using the facilities available at the AMGC and its partner universities.