Thematic Session 14

The geochemistry of clay minerals as a proxy for the origin and/or provenance of sedimentary particles

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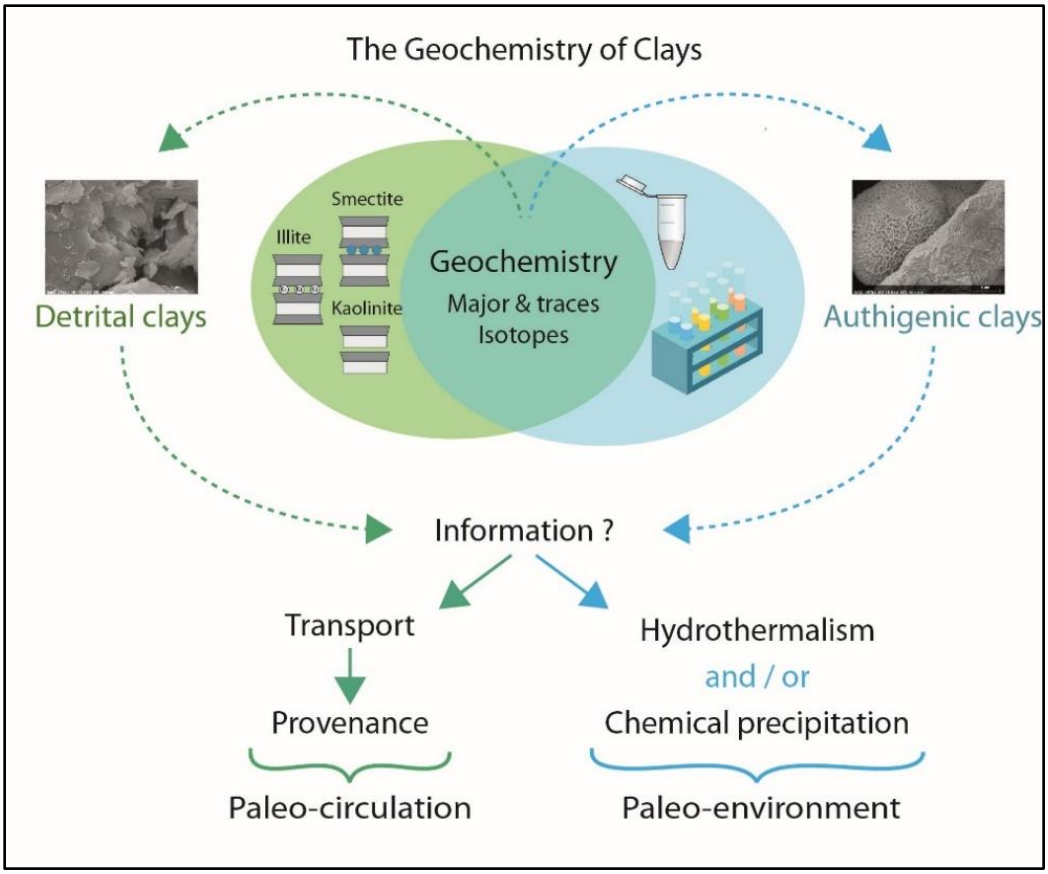
This session focuses on the use of the geochemical signature of clay minerals to identify the origin and provenance of sedimentary particles. Both the mineralogy and elemental geochemistry of clay are indicative of environmental conditions of clay formation. During pedogenesis, the nature and composition of the secondary products reflect the weathering stage and climate conditions within the watershed. Moreover, the isotopic composition of the secondary clays is often a conservative proxy to trace the provenance. Indeed, changes in the composition of detrital clay minerals would be interpreted by modifications in the watershed conditions and/or in the source areas. Likely authigenic clay minerals keep in their major and trace geochemical composition a fingerprint of the composition of the water column from which they precipitate. Their chemical signature will therefore record any change in the above water column composition, related to water-level variations or even influence of any hydrothermal solution. We invite any contributions combining mineralogy and geochemistry of clay minerals.

Keywords: Weathering, Hydrothermalism, Heritage, Authigenesis, Provenance.

Potential Journals: Marine Geology, Journal of Marine Science and Engineering.


The Geochemistry of Clays
Detrital clays
Smectite
Illite
Kaolinite
Geochemistry
Major & traces
Isotopes
Authigenic clays
Information ?
Transport
Provenance
Paleo-circulation
Hydrothermalism
and / or
Chemical precipitation
Paleo-environment