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Paper No. 283-11

Presentation Time: 4:25 PM

**LOESS IN THE LODEVE? EXPLORING THE DEPOSITIONAL CHARACTER OF THE PERMIAN SALAGOU FORMATION, LODEVE BASIN (FRANCE)**

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Permian strata of basins proximal to the Central Pangaeon Mountains in France archive regional paleoequatorial climate during a unique interval in geological history (late Paleozoic Pangaeon assembly, ice age collapse, megamonsoon inception). The voluminous (estimated 2 km) succession of exclusively fine-grained redbeds that composes the Permian Salagou Formation (Lodève Basin, France) has been interpreted as recording either lacustrine or fluvial settings. We present preliminary field data to explore the hypothesis that these deposits record eolian transport, and ultimate deposition as either loess or in a shallow lacustrine environment. Fieldwork includes ~1000 m of section described at dm-scale, and magnetic susceptibility measured at 0.5 m intervals, from sections strategically located in both proximal and distal areas, and from all stratigraphic levels of the unit to assess spatial and temporal variations. These data indicate that the lower and middle Salagou Formation is dominated by internally massive, red mud-siltstone with no evidence of channeling. Up-section, a higher frequency of ripples, rare hummocky cross stratification, and mudcracks record the presence of shallow water, but with no channeling, nor units of grain size exceeding very fine-grained sand. Randomly-oriented slickensides at various localities in the mid-upper Salagou may represent incipient pedogenesis. The lack of evidence for channels and other fluvial features casts doubt on a fluvial interpretation. A lacustrine interpretation is consistent with local evidence of shallow water. However, in the absence of fluvial transport indicators, large volumes of entirely fine-grained material that were delivered to the Lodève basin call for eolian transport, and thus a loess or shallow lacustrine interpretation. The documentation of voluminous paleo-loess in eastern equatorial Pangea during the Permian could reflect the influence of glaciation associated with the Variscan highlands. Together with previous studies that detail Permian loess in western equatorial Pangea, this work impacts our understanding of the global Late Paleozoic climate system and presents a need to reevaluate modeling parameters (e.g. equatorial mountain glaciation, atmospheric dust loading).

Session No. 283

[T117. Greenhouse to Icehouse Transition: Global Events of the Devonian, Carboniferous, and Early Permian II](#)  
Wednesday, 7 November 2018: 1:30 PM-5:30 PM

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