

Session 2.8

Pre-vegetated depositional landscapes and analogies with modern and extra-terrestrial systems

Vegetation has a direct influence on earth-surface processes including sedimentation, erosion, and pedogenesis. Most continental depositional models are based on actualism, where terrestrial vegetation plays an important role. In contrast, less is known about how terrestrial environments developed before the appearance of terrestrial vegetation in the Silurian. Can studies of extra-terrestrial fluvial and aeolian systems help us understand those on Earth, and *vice versa*? Recent studies have challenged paradigms that rivers formed before the onset of sediment-stabilizing vegetation had different morphometry, discharge regime, and planform than those that developed later. Similarly, it is generally held that the aeolian systems were more effective in reworking vegetation-free landscapes, although there is a lack of comprehensive understanding on the role of aeolian processes before the advent of land vegetation. This session focuses on new studies of the architecture and morphodynamics of fluvial and aeolian systems on Earth, Mars and other planets, including those from Modern vegetation-free hyper-arid and extremely cold environments.