General Theme 2
2.6

In the past decade, the study of fine-grained sedimentary rocks has seen unprecedented growth, driven largely by economic necessity and fueled by industry activity, expanding data availability, and novel techniques. Shales and mudstones contain the most abundant and complete record of earth history, and now, contrary to traditional perceptions, are found to abound with sedimentary features that speak to variable and complex depositional processes and settings.

Long-established paradigms, such as the idea that most shales and mudstones accumulated in low-energy settings via suspension settling, have been found inadequate to explain many of the observed features. These inadequacies have stimulated the quest to understand mud deposition and resulting sedimentary features and textures as a direct consequence of flow physics, and to overcome the limitations of algorithm-driven engineering approaches to the problem. Advances in the experimental study of muddy suspensions and fluid muds are beginning to make an impact on how ancient muds are interpreted, and much more progress can be expected through that avenue of inquiry in years to come. Because sedimentation-relevant properties of near-surface muds are subject to change due to early diagenetic processes, we consider understanding early diagenesis as an important component of sedimentological studies. Within this context, we invite contributions that combine insights from modern environments and experimental studies with careful petrographic, sedimentologic, and stratigraphic analysis of shales and mudstones in the rock record. The aim of the session is to provide a representative cross-section of the state of the art in shale sedimentology and stratigraphy, visions of its future development, and opportunities for advancing our knowledge of earth systems.