

General Theme 1

1.5

Shallow marine carbonate platforms represent invaluable archives of oceanographic conditions during Earth's history because their ecosystems are very sensitive to changes in environmental parameters, such as sea level, water temperature, chemistry and turbidity, as well as nutrient and oxygen levels. During the Mesozoic, the opening of the Atlantic Ocean and the following reorganization of continental landmasses facilitated the development of tropical, broad epicontinental seas where major carbonate platforms were established. The development of these biosedimentary ecosystems was clearly disturbed and even stopped by major events, which have their seeds in a complex interplay of global and local environmental changes. However, potential diagenetic overprinting and stratigraphic hiatus often affect these sedimentary archives and may prevent us from establishing clear cause-to-effect relationships between paleoenvironmental changes and biotic responses.

This session aims to bring together sedimentologists, geochemists and bio-chemo-sequence stratigraphers who are developing integrated approaches in order to unravel the impact of environmental conditions on shallow water carbonate ecosystems during the Mesozoic. We are inviting contributions that are developing innovative tools to deepen our understanding of forcing mechanisms on carbonate platforms, but that are also highlighting limitations of the methods used. Caveats include the impact of early and late diagenesis on elemental composition and isotopic systems used to trace detrital input, nutrient supply, oxygenation and temperature, and the identification and quantification of time gaps that reduce the completeness of the sedimentary record.