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Integrated stratigraphy and paleoclimate teleconnectivity as tools to understand the interaction between the Neogene Mediterranean and Paratethys realms

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It is nowadays recognized that variability of the present day atmospheric and oceanic circulations in the earth system give rise to an array of interacting (or teleconnected) climate modes and dynamical subsystems. On the other hand the impact of past climate changes on the dynamics of the terrestrial and marine sedimentary record is likely to generate a number of chemical, physical and biological signals that can be extracted from the rock record by an integrated stratigraphic approach. The Neogene provinces of the Mediterranean and Paratethys represent an outstanding example of a couplet of large contiguous marine and continental realms that ostensibly exerted mutual interaction in terms of paleoclimatic, paleoceanographic, and paleobiogeographic evolution. The next generation of paleogeographic and paleoclimatic reconstructions and models derived from stratigraphic datasets on Mediterranean-Paratethys scale will definitely need validation and testing of associated paleoclimatic patterns. This will serve in turn as feedback in order to refine our understanding of the present-day climatic teleconnectivity across major adjacent marine and continental provinces of the Earth.