# A new lithospheric model for southeastern Sicily (Italy)

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An interdisciplinary approach for a new lithospheric model for southeastern Sicily and the Sicily Channel has been recently proposed by Manuella et al. [1], as retrieved from the integration of published petrologic and geophysical data.

The model elaborated by Manuella et al. [1] points out the existence of a Permo-Triassic oceanic lithosphere that broadens from the Hyblean Plateau to the Sicily Channel, underlying a thick Mesozoic-Cenozoic sedimentary and volcanic sequence, in continuity with the adjacent Mesozoic Ionian-Tethys ocean, thus confirming the hypothesis of Scribano et al. [2]. The Permo-Triassic basement consists of a level of peridotites, affected by different degrees of serpentinization (35–100 vol.%) ranging to a depth of 8–19 km, and a remarkable anomaly occurs at 19 km, corresponding to the Moho discontinuity, which has been considered as a serpentinization front.

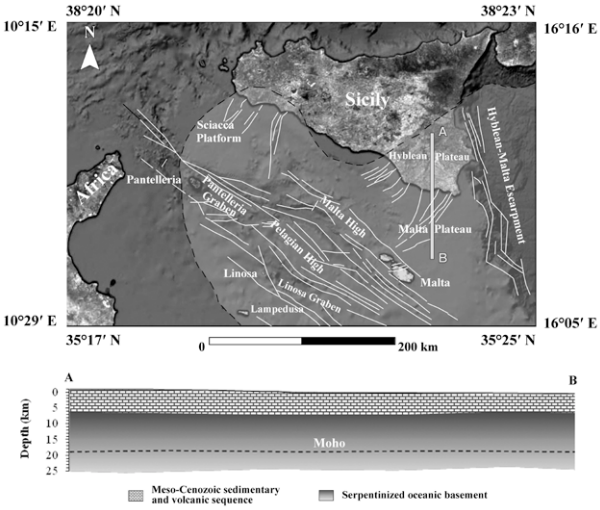


**Figure 1.** A schematic view of the new lithospheric model

[1] Manuella *et al.* (2013), *J. Geodyn.* 66, 92–102. [2] Scribano *et al*. (2006), *Miner. Petrol*. 86, 63–88.

# Spatial and temporal variability in clay mineral and iron (oxyhdr)oxide minerals of the Changjiang (Yangtze) River suspended sediment: Monsoon controlling weathering

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Clay mineral assemblages and iron (oxyhdr)oxide are sensitive to bedrock geology and chemical weathering, and therefore have long been regarded as a powerful indicator of the nature of the source areas. The goal of the present work is to show quantitative spatial distribution and seasonal variability pattern of clay mineral assemblages and iron (oxyhdr)oxide in river suspended sediments for the entire Changjiang (Yangtze) basin.

The Changjiang (Yangtze) River originates on eastern periphery of the Tibetan Plateau and causes large continental masses from Tibet to the oceans. A large part of the Changjiang Basin has a subtropical monsoon climate. The suspended sediments of Changjiang River drainage basin were collected during the flood (July-August 2007) and dry (December 2007, January 2008) seasons.

In the present work, river suspended sediment was investigated by quantitative mineralogical, geochemical analyses of bulk samples and single particles.The results indicate that an increasing trend of hematite% and goethite% were observed in the main channel from the upper to middle reaches. The concentration of illite has a ranges from 60% to 80% in summer and 40% to 60% in winter, both with a decreasing trend from the upper to lower reaches. The kaolinite contents of the lower stream abruptly increased from 10% to 30% in the dry seasons (winter) relative to the flood seasons (summer). This peak is probably associated with strong inputs of suspended material from the Poyang lake and its tributaries (located between middle and lower reaches of the Changjiang River) .

Our results suggest that spatial and temporal variations in clay mineral and iron (oxyhdr)oxide minerals primarily reflect variations in the intensity of the monsoon, and which is the principal forcing factor on the mechanical and chemical weathering processes between the different sub-catchments of Changjiang River.


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