



Société
Géologique
de France

27^e RÉUNION DES SCIENCES DE LA TERRE

01 au 05 novembre 2021

Centre de Congrès | LYON

Sessions scientifiques
Conférences Grand Public

Forums :
Enseigner les géosciences
Formations et Métiers
Géoparcs, médiation et géotourisme

Espace professionnel
Balades géologiques
et excursions



Evidences of pre-Zanclean marine reflooding of the Mediterranean Basin

**Speranta-Maria Popescu¹, Jean-Pierre Suc^{2*}, William Cavazza³,
Mihaela Carmen Melinte-Dobrinescu⁴, Nadia Barhoun⁵, Christian Gorini²**

1, GeoBioStratData.Consulting, Rillieux la Pape, France.

2, Institut des Sciences de la Terre, Sorbonne Université, Paris, France.

3, Dipartimento di Scienze della Terra e Geologico-ambientali, Università di Bologna, Bologna, Italie.

4, National Institute of Marine Geology and Geoecology, Bucharest, Romania.

5, Faculté des Sciences ben M'Sik, Casablanca, Morocco.

The base of the Trubi Formation in southern Italy -formally defined as the Zanclean Global Boundary Stratotype Section and Point (GSSP) at 5.33 Ma- has been traditionally considered as marking the re-establishment of normal marine conditions in the Mediterranean basin after the Messinity Salinity Crisis (Hilgen & Langereis, 1993). A coastal sedimentary prism consistently underlying the Trubi Formation along the southeastern coast of Calabria is composed of one to three progradational parasequences including nearshore, beach, and fluvial sedimentary facies, thus indicating that a relatively high baselevel existed before deposition of the Trubi Formation (Cavazza & DeCelles, 1998). Integration of calcareous nannoplankton and foraminifera, dinoflagellate cysts, and pollen grains analyses shows that such a sedimentary prism is full marine and has a latest Messinian age (Popescu *et al.*, 2021). This points to a marine reflooding of the Mediterranean basin before the beginning of the Zanclean as supported in many places around the Mediterranean Basin (Morocco, Alboran Sea, Southeastern Spain, Apennine foredeep, Dardanelles Strait, etc.: Cornée *et al.*, 2006 ; Bache *et al.*, 2012 ; Lancis *et al.*, 2015 ; Karakitsios *et al.*, 2017). The age of the reflooding has been proposed at 5.46 Ma by Bache *et al.* (2012). The coastal sedimentary prism evidenced in Calabria is thus correlated with the Arenazzolo Formation in Sicily (Popescu *et al.*, 2021). These data contribute to specify the status of the Sicilian Caltanissetta Basin as a peripheral basin, probably somewhat deeper than the other peripheral basins, where evaporites (including the halite and K-Mg salts) belong to the 1st step (marginal) of the crisis (5.97-5.60 Ma), as also supported by several data in the region (Bertini *et al.*, 1998; El Euch-El Koundi *et al.*, 2009).

Bache, F., Popescu, S.-M. *et al.*, 2012. *Bas. Res.*, 24, 125–153.

Bertini, A., Londeix, L. *et al.*, 1998. *Micropaleontology*, 44, 413-433.

Cavazza, W., DeCelles, P.G., 1998. *Tectonophysics*, 298, 223–241.

Cornée, J.-J., Ferrandini, M. *et al.*, 2006. *Palaeogeogr., Palaeoclimatol., Palaeoecol.*, 230, 129-154.

El Euch-El Koundi, N., Ferry, S. *et al.*, 2009. *Terra Nova*, 21, 41-48.

Hilgen, F.J., Langereis, C.G., 1993. *Earth Planet. Sci. Lett.*, 118, 167–179.

Karakitsios, V., Roveri, M. *et al.*, 2017. *Bas. Res.*, 29, 203-233.

Lancis, C., Tent-Manclús, J.E. *et al.*, 2015. *Geol. Acta*, 13, 211–228.

Popescu, S.-M., Cavazza, W. *et al.*, 2021. *Journ. Geol. Soc.*, 178,3, jgs2020-183.

Key-words: Post-crisis marine reflooding, Calabria, Sicily.