Geophysical Research Abstracts
Vol. 13, EGU2011-13586-2, 2011
EGU General Assembly 2011

Messinian Events In The Mediterranean: A review from the offshore basins

Christian Gorini (1,2), François Bache (3), Ferran Estrada (4), Belén Alonso (4), Abdellah Ammar (5), Daniel Aslanian (6), Damien Do Couto (1,2), Antonio Tadeu Dos Reis (7), Mohammed Elabbassi (5), Gemma Ercilla (4), Marga Garcia (8), Julien Gargani (9), Pol Guennoc (10), Laurent Jolivet (11), Gwenael Jouannic (9), Agnes Maillard (12), Ludovic Mocochain (13), Speranta-Maria Popescu (14), Marina Rabineau (15), Jean Loup Rubino (16), Jean-Pierre Suc (1,2)

(1) Université Pierre et Marie Curie, Paris6, 4 place Jussieu, France (christian.gorini@upmc.fr), (2) Université Pierre et Marie Curie-Paris 6 ISTEP,CNRS-INSU, 4 place Jussieu, 75005 Paris, France, (3) GNS Science - TE PU AO Ocean Exploration Section 1 Fairway Drive, Avalon PO Box 30 368, Lower Hutt 5040, New Zealand, (4) Instituto de Ciencias del Mar, CSIC, Passeig Marítim de la Barceloneta, 37-49, 08003 Barcelona, Spain, (5) Université Mohammed V-Agda Rabat, Morocco, (6) IFREMER, Géosciences marines, LGG, BP 70, 29280 Plouzané Cedex, France, (7) Departamento de Oceanografia Geologica/UERJ-Brazil (Rua São Francisco Xavier, 524, 48 Andar, Maracaña, Rio de Janeiro RJ CEP: 20.550-900, Brazil, (8) SPRI, University of Cambridge, Lensfield Road, CB2 1ER, Cambridge, United Kingdom, (9) Université Paris Sud - 11, Laboratoire IDES, UMR 8148, bat. 509 - Université Paris-Sud 91405 Orsay, France, (10) BRGM, GEO-GBS, 3 avenue Claude Guillemin, BP 60, BP 609009, 45060 Orléans Cedex 02, France, (11) Institut des Sciences de la Terre d'Orleans INSU CNRS, France, (12) Université de Toulouse; UPS (SVT-OMP); LMTG, 14 Av, Edouard Belin, 31400 Toulouse, France, (13) ENS Paris, France, (14) Louisiana State University, Department of Geology & Geophysics, Baton Rouge, LA, USA, (15) IUEM, Domaines océaniques (UMR 6538), 1 place Nicolas Copernic, 29280 Plouzané, France, (16) TOTAL, TG/ISS, CSTTF, Avenue Laribeau, 64018 Pau Cedex, France

This study concerns a synthetic review of recent advances on the Messinian history in the Mediterranean basin based on seismic stratigraphy carried out in the scope the research group Action Marges. We focus on the sedimentary records around the western Mediterranean basin to address a discussion on controversial points, such as:
(1) Forced regressive marine detrital prisms derived from the Messinian subaerial erosion that preceded the massive evaporates. These units are interpreted either as the record of the beginning of the major Messinian drawdown ($\sim$1,500 m) or as previous falling stage deposits. The debate still occurs on the nature of this infra-salt megasequence.
(2) Submarine abrasion surfaces and/or terraces all around the central basin are interpreted as the result of stepped transgressive sea-level movements at the end of the Messinian Salinity Crisis; such interpretation are partly taken into account within recent numerical models of a rapid reflooding of the Mediterranean Sea.
How the Mediterranean sea and the Atlantic ocean has been reconnected is well documented on the Alboran basin by the presence of an erosive corridor in front of Gibraltar straight. Catastrophic debris flow episodes observed all around the Mediterranean basins and in the deep Mediterranean Moroccan offshore, are probably to be linked to this "deluge". Nevertheless, questions still remain concerning the time and process involving on this event.