

## :: Deep-sea Record of Mediterranean Messinian events (DREAM) - May 5-8 2013 Brisighella (Italy)

Convenors: A. Camerlenghi, G. deLange, R. Flecker, D. Garcia-Castellanos, C. Hübscher, W. Krijgsman, J. Lofi, S. Lugli, S., V. Manzi, T. McGenity, G. Panieri, M. Rabineau, M. Roveri and J.F. Sierro

About 6 million years ago the Mediterranean Sea was transformed into a giant saline basin, one of the largest in the Earth's history and surely the youngest. This event, commonly referred to as the Messinian salinity crisis (MSC), changed the chemistry of the global ocean and had a permanent impact on both the terrestrial and marine ecosystems of a huge area surrounding the Mediterranean region. The first fascinating and successful MSC scenario proposed following DSDP Leg XIII in 1970 envisaged an almost desiccated deep Mediterranean basin with a dramatic ~1,500 m drop of sea level, the incision of deep canyons by rivers extending across dried-up continental margins, and a final catastrophic flooding event when the connections between the Mediterranean Sea and the Atlantic were re-established in the early Pliocene (5.33 Ma).

The purpose of this workshop was to gather three generations of scientists - 37 scientists and 13 students/young post-docs (*below*) in order to identify locations for multiple-site drilling (including riser drilling) in the Mediterranean Sea that would allow us to solve the several open questions that still exist concerning the causes, processes, timing and consequence at local and planetary scale of the Messinian salinity crisis. Participants included the founders of the Mediterranean desiccation theory, M.B. Cita, W.B.F. Ryan, K. Hsu, along with N. Eguchi and J. Kuroda, representing the operator of the *Chikyu* and the Japanese scientific community respectively.

The programme was fulfilled in a friendly informal atmosphere, though dominated by intense constructive discussion. After the first

day of presentations by invited speakers on key scientific aspects of the MSC, the second was dedicated to the review of our existing knowledge, primarily from seismic data sets at a regional level in light of the identification of realistic drilling targets. The last day of the workshop was devoted to the organisation of future activities.

The outcome of the workshop was the willingness to proceed with the submission to IODP of a Multi-phase Drilling Project including several drilling proposals addressing specific drilling objectives, all linked to the driving objectives of the MSC drilling. Several proposal ideas emerged to support the Multi-phase Drilling Project concept: Salt tectonics and fluids, Deep stratigraphic and crustal drilling in the Gulf of Lion (deriving from the GOLD drilling project), Deep stratigraphic and crustal drilling in the Ionian Sea, Deep Biosphere, Sapropels, and the Red Sea.

In order to focus future actions to specific objectives it was decided to establish thematic working groups initially formed by DREAM Workshop participants and to be expanded later by including additional experts according to the DREAM MSC initiative and the 6 potential complementary drilling proposals. A list of future actions was approved, including a proposal of a second MagellanPlus Workshop (DREAM II) focussing on the pre-proposal writing, and a COST Action for long-term scientific networking (pre-proposal submitted).

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*DREAM Workshop participants (indoor, because of rain throughout the time of the workshop): 1 Dirk Simon, 2 Alastair Fraser, 3 Marina Rabineau, 4 Gert DeLange, 5 Stefano Lugli, 6 Axel Ehrhardt, 7 Luc Lourens, 8 Marco Taviani, 9 Patrick Grunert, 10 Daniel Garcia-Castellanos, 11 Estelle Leroux, 12 Junichiro Kuroda, 13 Andrea Argnani, 14 Vinicio Manzi, 15 Francisco Javier Sierro, 16 Jean Pierre Suc, 17 Judith McKenzie, 18 Dave Hoddell, 19 Wout Krijgsman, 20 Christian Gorini, 21 Werner Hieke, 22 Bill Ryan, 23 Maria Bianca Cita, 24 Giovanni Aloisi, 25 Abdulaziz Al-Balushi, 26 Fabiano Gamberi, 27 Ken Hsu, 28 Marco Roveri, 29 Terry McGenity, 30 Giuliana Panieri, 31 Riccardo Geletti, 32 Simone Ziegenbalg, 33 Marlies van der Schee, 34 Anna Del Ben, 35 Christian Hübscher, 37 Johanna Lofi, 38 Marcello Natalicchio, 39 Nobu Eguchi, 40 Roger Urgeles, 41 Rachel Flecker, 42 Hayley Allen, 43 Chiara Sauli, 44 Angelo Camerlenghi, 45 Romain Pellen, 46 Diana Ochoa Lozano, 47 Oliver Driussi, 48 Alejandra Lago Cameselle, 49 Arianna Mocnik, 50 Stefano Marabini.*