



## **Evidences of the Messinian erosional surface in the Black Sea**

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In 1975, sediment cores from leg DSDP 42b (sites 380A and 381) revealed a thin sediment layer in the Black Sea basin indicating a shallow water environment at the Miocene-Pliocene boundary. From this evidence and in the wake of the hypothesis of the Messinian Salinity Crisis (MSC), it was proposed that the Black Sea, like the Mediterranean Sea, suffered a desiccation period at the end of the Messinian (Hsü and Giovanoli, 1979). Whereas the main topics of the MSC in the Mediterranean Sea is now widely accepted, the lack of evidence for a Messinian erosional surface in the Black Sea left the debate about the Messinian desiccation of this basin open until today. The analysis of high resolution multi-channel seismic data acquired during the BlaSON surveys brings important new elements for this scientific debate: (1) Down the slope off the Bosphorus, a clear erosional surface linked to the top of the Late Miocene shallow water environment unit of site DSDP 381 was found. The Lower Zanclean overlying unit inevitably dates this erosional surface of the Messinian event. (2) A wide intra-Pontian erosional surface (IPU) is evidenced on the Romanian shelf. This IPU is characterized by a sharp decrease in the incision rate from outer (deep canyons) to inner shelf (superficial incisions network). According to the most recent Paratethyan and Mediterranean stratigraphic scale correlations, the IPU erosional surface is considered as the analogue to the Messinian Erosional Surface described down slope off the Bosphorus. In addition to recently evidenced inland erosional signature (Clauzon et al, 2005), the wide regional Messinian erosional surface we underline on the Western Black Sea margins validates the Black Sea Messinian desiccation hypothesis.