{rokbox title=|Map of the Gulf of Lions area showing the regions of dense water formation on the shelf and in the MEDOC region (striped areas) and a schematic diagram depicting the dense shelf water cascading and open sea convection processes across the margin with the water masses involved :: Figura: Autores| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-jose-luis-lopez-jurado-bottom-nepheloid-layers-puig-et-al-2013-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-jose-luis-lopez-jurado-bottom-nepheloid-layers-puig-et-al-2013.jpg{/rokbox}

Pere Puig, Xavier Durrieu de Madron, Jordi Salat, Katrin Schroeder, Jacobo Martín, Aristomenis P. Karageorgis, Albert Palanques, François Roullier, **José Luis Lopez-Jurado**, Mikhail Emelianov, Thierry Moutin, Loïc Houpert, (2013).
**Thick bottom nepheloid layers in the western Mediterranean generated by deep dense shelf water cascading**
. Progress in Oceanography. Volume 111, April 2013, Pages 1–23.

Abstract: The analysis of a compilation of deep CTD casts conducted in the western Mediterranean from 1998 to 2011 has documented the role that dense water formation, and particularly deep dense shelf water cascading off the Gulf of Lions, plays in transporting suspended particulate matter from the coastal regions down to the basin. Deep CTD casts reveal that after the 1999 and 2005–2006 deep cascading events the Western Mediterranean Deep Water (WMDW) was characterized by the presence of a thick bottom nepheloid layer (BNL) that corresponded in thickness with a thermohaline anomaly generated by the mixture of dense waters formed by deep convection in the open sea and by deep cascading. This BNL can be hundreds of meters thick and in the central part of the basin usually exhibits suspended sediment concentrations of minus 0.1 mg/l above background levels, reaching higher concentrations close to the continental rise, with near-bottom peaks >1 mg/l. After winter 1999 the BNL spread from the Gulf of Lions and the Catalan margin over the northwestern Mediterranean basin, reaching west of the Balearic Islands and the Ligurian Sea, while after winters 2005–2006 the BNL covered the entire western Mediterranean basin. Thickness and concentration of the BNL tend to diminish with time but this trend is highly dependent on the volume of dense water generated, both by convection and cascading. After winter 1999 the BNL signal vanished in one year, but after winters 2005–2006 it lasted for longer and the turbidity signal can still be distinguished at present (2011). Particle size distribution in the BNL reveals the presence of large aggregates up to 1 mm in size formed by a mixture of single particles with the same bimodal grain size distribution as the surface sediments found in the northwestern Mediterranean slope and basin. Results presented in this paper highlight the fact that the WMDW can be periodically affected by the arrival of new dense waters loaded with suspended particles mainly introduced by resuspension processes during major cascading events, being a key process that could ultimately affect deep-sea biogeochemical cycles in the western

Mediterranean.

Keywords: