



Rift basins and active tectonic control on sedimentary distribution on the western termination of the North Anatolian Fault, Aegean Sea (Greece) ; First results from WATER cruise (R/V Téthys II, July 2017)

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The WATER cruise (July 24th to August 04th 2017) onboard the R/V "Tethys II" allowed to acquire 1378 km of VHR (Very High Resolution) seismic profiles in the Evia Gulf, the Maliakos Gulf and along the Oreoi Channel. This study area, within the northwestern part of the Aegean Sea (Greece), is tectonically active (Palyvos et al., 2006; Sakellariou et al., 2007; Cundy et al., 2010 and Müller et al., 2013). The Hellenic compression and the extensive tectonic induced by African slab retreat and the North Anatolian Fault (NAF) establish a complex stress field in this zone (Sakellariou D. and Tsampouraki-Kraounaki K., 2018). This region therefore constitutes a key sector at the junction between the extensional basins, the frontal thrusts of the internal Hellenic zones and the western termination of the NAF. The study of the area allows to understand the relations between inherited major structural discontinuities of the Aegean lithosphere and the Plio-Quaternary extension. The preliminary results of the analysis of the WATER seismic data show i) a strong tectonic control characterized by numerous normal faults and by the development of horsts and half-graben, ii) the development of a complex sedimentary system due to the LGM (Last Glacial Maximum, Sakellariou et al., 2007) and the active extensive tectonic, and iii) several zones where the acoustic signal is strongly disturbed, called in literature ATZ, (Acoustic Turbide Zone, Papatheodorou et al., 1993; Yoo D.G. and Park S.C., 2000 and Missiaen et al., 2002), probably representing the Pleistocene-Holocene boundary.