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Re-analysis of the Krakatoa Tsunami Records along the European Atlantic Coast

M. Karpytchev (1), C. Daubord (2), H. Hebert (3), and G. Woppelmann (1)

(1) University of La Rochelle, CNRS UMR 7266, La Rochelle, France (mikhail.karpytchev@univ-lr.fr), (2) SHOM, Brest, France, (3) DAM DIF, CEA, Arpajon, France

The explosion of the Krakatoa volcano on August, 27, 1883, generated one of the highest tsunami ever recorded by tide gauges. The sea level measurements available at that time were collected and published by the Krakatoa Committee (Symons, 1888) but the original records seem to be lost. Pelinovsky et al (2005) digitized the Krakatoa Committee reproductions and pointed at the difficulties of using Symons' (1888) figures for a quantitave analysis. In this study, we attempted to identify the Krakatoa tsunami signature in the Symons' records along the British and French Atlantic coasts by comparing them to the sea level variations measured at the tidal station of Saint Servan. The original Saint Servan sea level record has been recently discovered in the French Navy (SHOM) data archive. The wavelet-based technqiues of cross-correlation and coherence analysis revealed a coherence between the Saint Servan observations and some of the Krakatoa Comittee records. The wavelet-based methods helped to identify the Krakatau tsunami signature in the English Channel and to estimate its parameters. Additional signal detection techniques were required, however, to extract the Krakatoa tsunami from the sea level oscillations recorded in the Bay of Biscay, at Rochefort and Soccoa tidal stations.