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## **UNCERTAINTY BUDGET OF MEDITERRANEAN STORM SURGE PROJECTIONS FOR THE 21st CENTURY.**

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Quantifying the impact of climate change not only consists of estimating the expected changes of different parameters from climate model results; it also involves assessing the uncertainties associated with these changes. In this presentation we estimate the uncertainty budget of Mediterranean storm surge projections for the 21st century. In particular we evaluate the uncertainty associated with the source of atmospheric forcing, the ocean model configuration and the chosen scenario. To do that we examine the output of a barotropic ocean model forced by high-frequency atmospheric pressure and wind fields from different regional climate models (RCMs) which in turn are nested into different global climate models (GCMs).

Three different combinations of simulations have been analyzed in order to study the uncertainty sources. First we evaluate the impact of the chosen scenario. To do this we examine a set of simulations run under three climate change scenarios but using the same RCM and GCM. Secondly we determine the uncertainty associated with the variability reproduced by different climate models. Finally, we examine simulations forced, on one hand, by a OGCM, and on the other hand, by 12 different RCM, all them for the same climate change scenario. This allows evaluating the impact of the RCM physics and resolution.