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Sediment dispersal mechanism in North-western Mediterranean Sea during a storm event due to a flash-flood river

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This work presents the first results of the research of the sediment dispersal mechanism near Besos River mouth (North-western Mediterranean Sea) during a storm event. Field data from hydrodynamic parameters and suspended sediment concentration are used to assess sediment transport patterns and to evaluate their correlation with land inputs and with meteorological and hydrodynamic forcings. Using the ocean numerical modelling system ROMS and its sediment transport module, multiple classes are assessed in order to determine the transport and fate of sediments. Different idealised simulations are designed to explore the influence of the inner shelf hydrodynamics on the sediment dispersal mechanism. The results give a first understanding of the sediment transport mechanisms in an area where the adjacent beaches have an enormous value for the economical development of the region.