



Following a squall line that produced moderate meteotsunamis in the Balearics

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On 22 January 2021, an active squall line, developed within the cyclone Hortense, swept across Mallorca and Menorca (Balearic Islands). The associated extreme winds affected the Balearic Islands, with 50-year record-breaking intensities at the Palma airport, where wind gusts of 130 km h⁻¹ were observed. An outstanding long-lived pressure jump was associated with the squall line, giving rise to moderate meteotsunamis at several ports and inlets of the Islands, producing a sea level oscillation of 60 cm in the Port of Ciutadella (Menorca).

An observational description of the event, using land-based and remote-sensing systems, is presented. In addition, an approach to the diagnosis of the physical processes involved is carried out. Finally, the predictability of the physically relevant aspects of the event is investigated by means of atmospheric and oceanic numerical models.