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Near Real Time scatterometer winds as support to the operational storm surge forecasting in Venice

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The Venice storm surge forecasting Office (Istituzione Centro Previsioni e Segnalazioni Maree, ICPSM) is entrusted to forecast the storm surge level in the Venice city. The forecasting tools are statistical and hydrodynamic models, both relying on the quality of the meteorological input, acknowledged as one of the major critical points. At present the ECMWF forecasts fields, used to force the hydrodynamic storm surge models, appear to underestimate the wind in the Adriatic Sea and, more in general, not to perform always appropriately in this basin.

To monitor the quality of the atmospheric model forecasts in Near Real Time (NRT) and to assess their quality on statistical basis, they asked for NRT scatterometer winds. An automatic system has been set up by ISAC to let them acquire in NRT QuikSCAT and ASCAT 25 km by 25 km wind fields over the Mediterranean Sea: this system is running since 2008. This presentation illustrates the main characteristics of the NRT winds as well as the NRT and off-line products derived comparing forecasted and in-situ winds with the scatterometer one. Present limitations of using the NRT satellite winds as support to the operational storm surge forecasting are discussed, along with the future possible studies made possible by the co-located data set acquired by the system.