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STORM SURGES



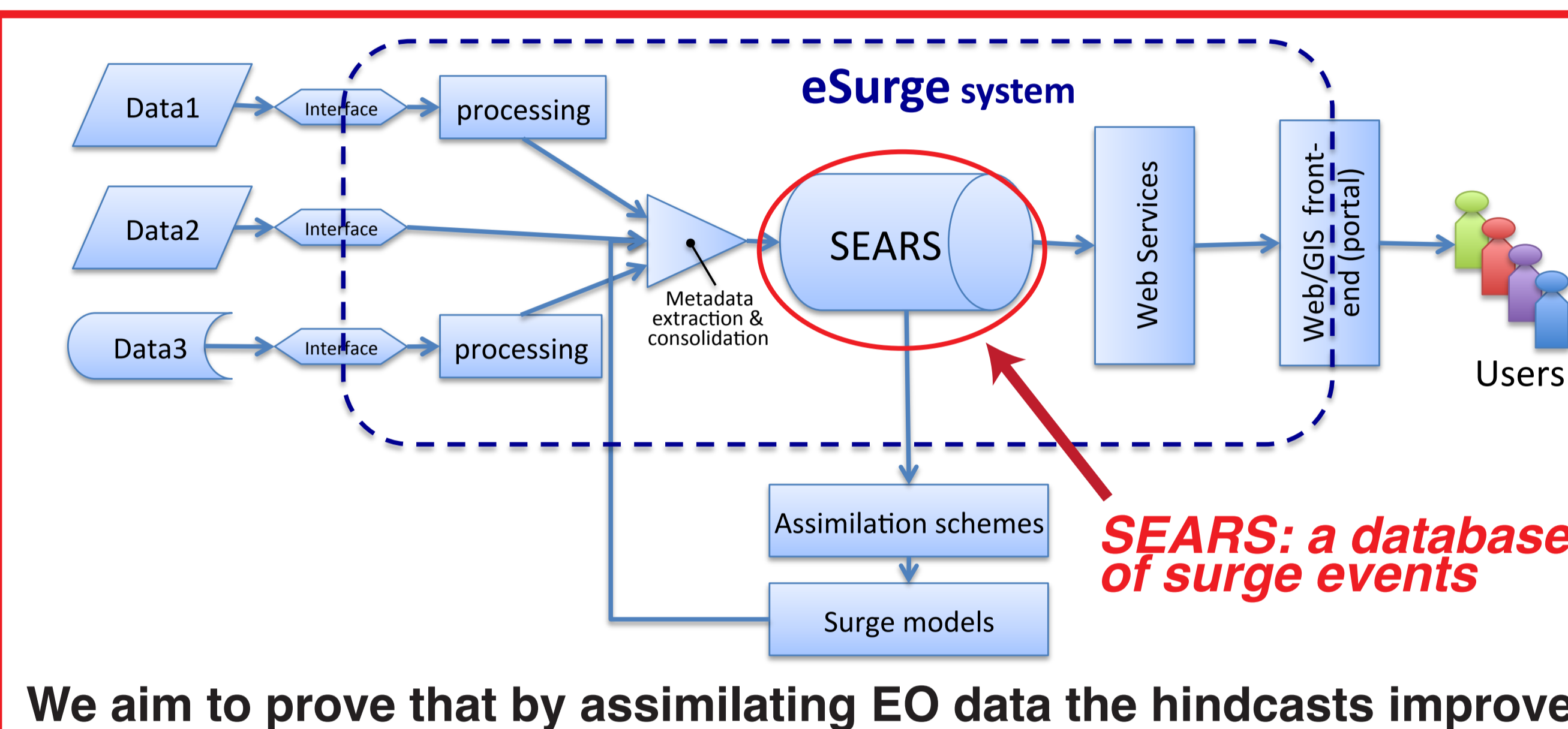
Earth Observation data have a very important role to play (winds, waves, sea level...) BUT their uptake by users must be encouraged and supported

To this purpose **esa** has launched **eSurge**

eSurge Objectives:

1. To contribute through Earth Observation to an integrated approach to storm surge, wave, sea-level and flood forecasting as part of a wider optimal strategy for building an improved forecast and warning capability for coastal inundation.
2. To increase the use of the advanced capabilities of ESA and other satellite data for Storm Surge applications

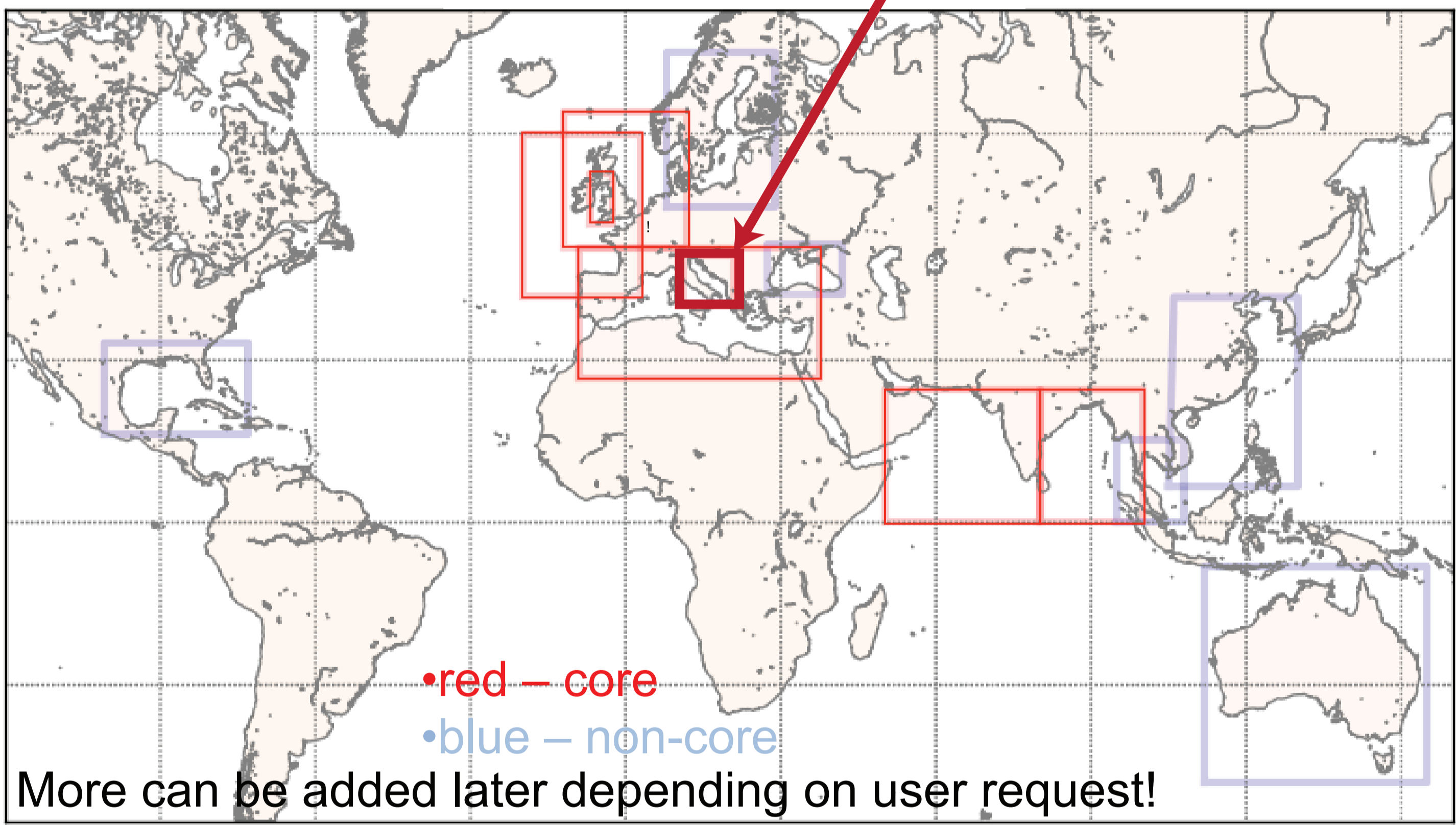
The eSurge System



The system is built around a database of surge events (SEVs); for each event we provide pointers to several different kinds of in situ and Earth Observation data, including data specifically re-processed for the purpose, like coastal altimetry

The eSurge consortium: **Logica UK (leader)**, **National Oceanography Centre**, **Coastal and Marine Resources Centre**, **Danish Meteorological Institute**, **Royal Netherlands Meteorological Institute**, **Consiglio Nazionale delle Ricerche (Italy) - for eSurge-Venice**

eSurge Areas of Interest

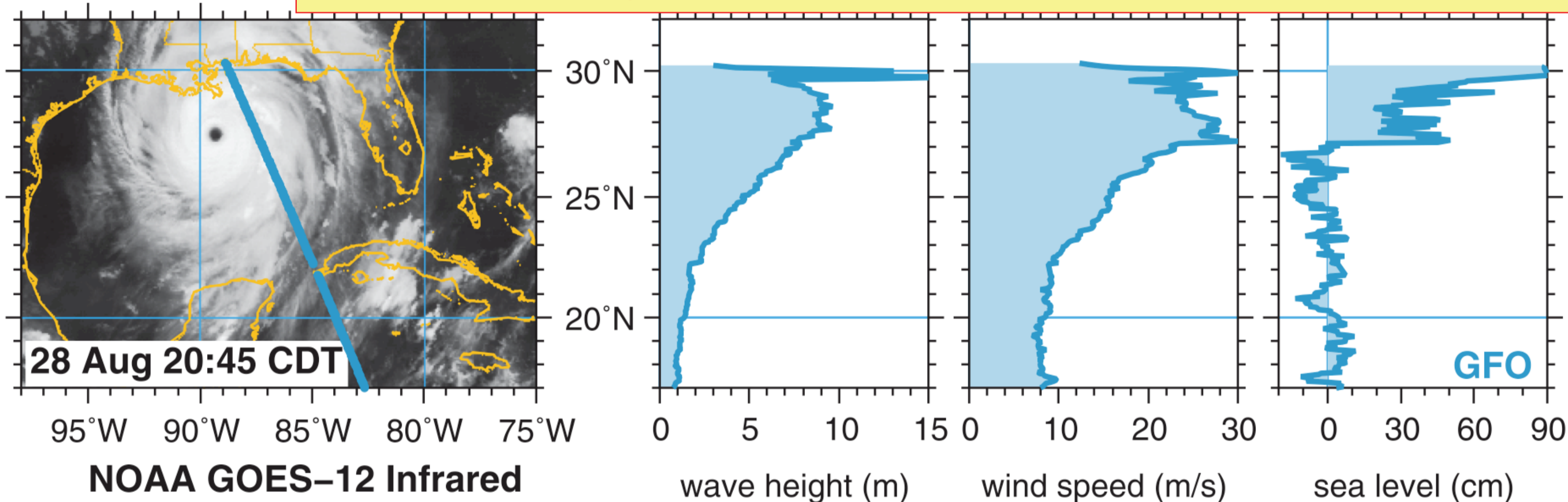


COASTAL ALTIMETRY in eSurge

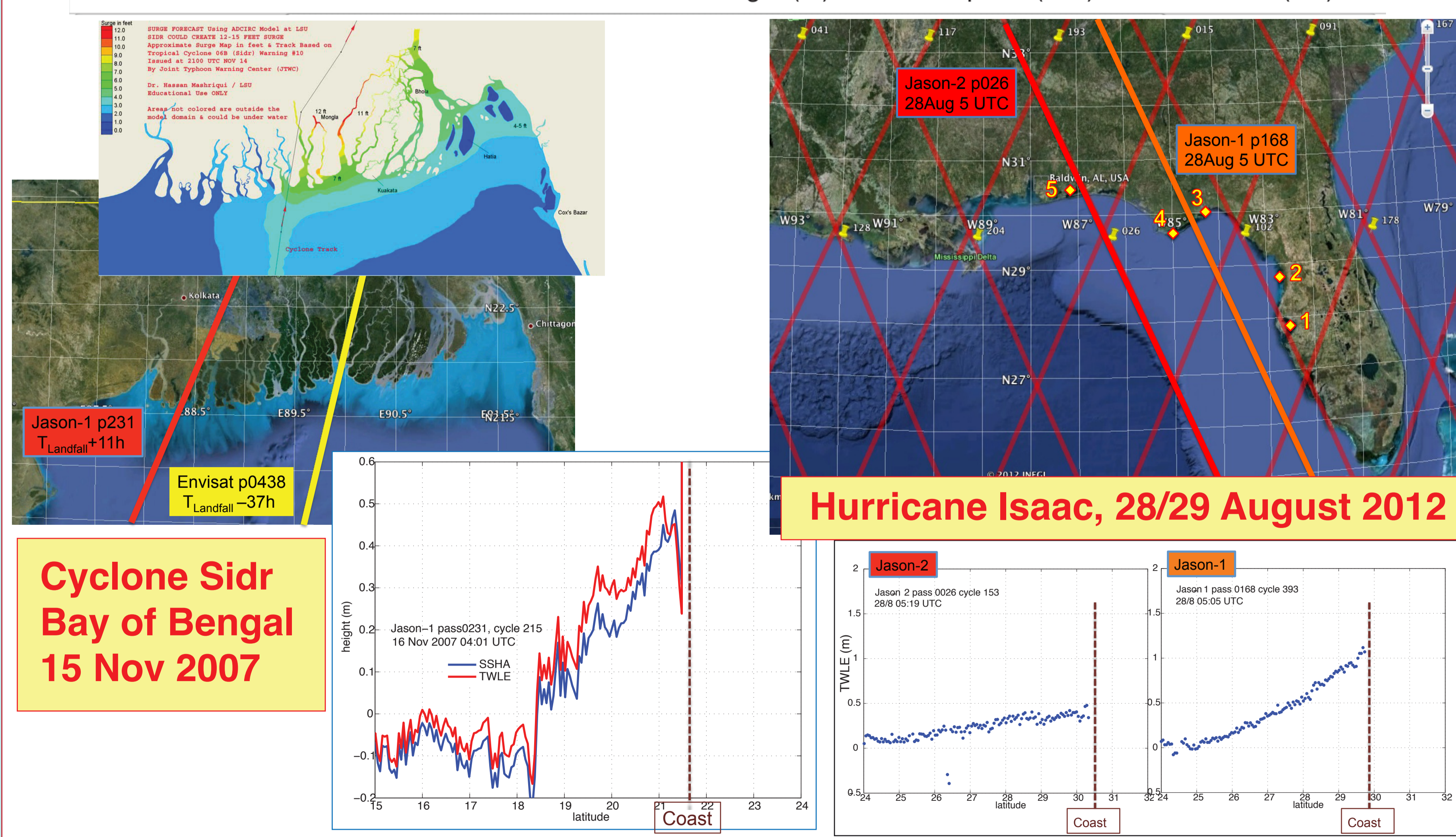
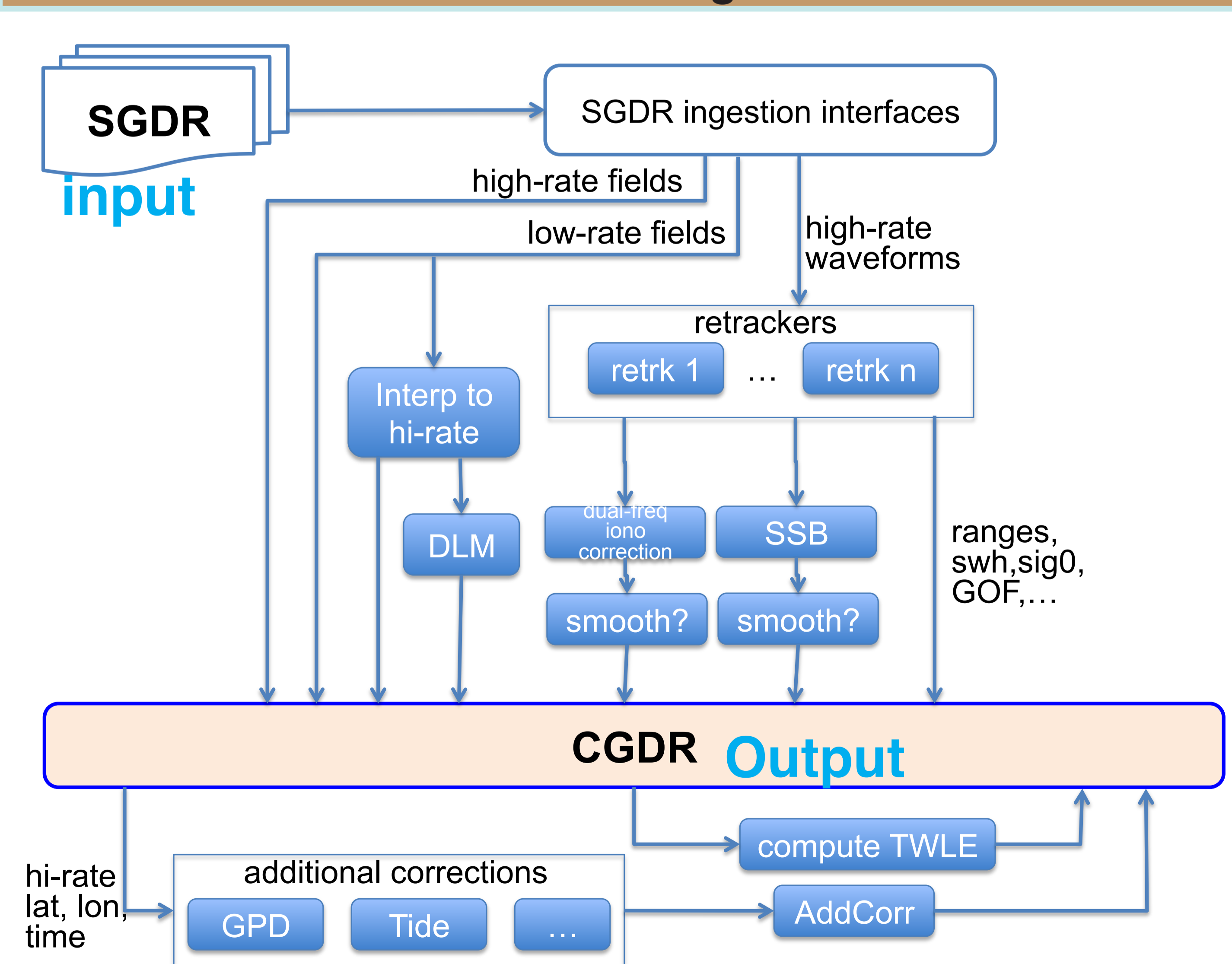
Coastal Altimetry has a prominent role to play as it measures the total water level envelope directly, and this is one of the key quantities required by storm surge applications and services, plus the coastal wave field which should lead to better forecast of wave setup and overtopping processes

Examples of storm surges captured by altimetry:

Katrina seen by Geosat follow-on (Scharroo et al., EOS 2005)



SCHEMATIC OF THE COASTAL ALTIMETRY PROCESSOR FOR eSurge



The processing of the 'raw' altimetric data will be attempted also in NRT (Near-Real-Time) for a number of surge events.

eSurge is going to be one of the first pre-operational applications of coastal altimetry and a proof of the benefits to society that can be brought by this relatively new branch of marine remote sensing

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