# **SWOT Status and Challenges**

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#### **SWOT** measurement system



# Understanding coastal sea level involves small-scale interaction of ocean currents, tides, gravity, river discharge



Y. Chao/RSS

#### Surface Vorticty and Vertical Velocity Reconstruction A Grand Challenge for Ocean Remote Sensing



(Qiu et al, 2016)

#### **Challenges: Dealing with Internal tides and internal waves**



#### ECCO 1/48 deg model simulations



#### **Mission Development Status**

- The Mission has passed Preliminary Design Review (April 2016) and been in Phase C since May 2016.
- A new Science Team (ST) has been established via a joint ROSES and TOSCA selection process.
- The first ST meeting was held in Pasadena, June 13-16, 2016.
- The ST is composed of 53 investigation teams with 25 in oceanography, 21 in Hydrology, and 7 in synergistic sciences.
  Approximately 40% of the new members are from the SDT.
- The ST is rich in international participation: 22 in US, 18 in France, 6 in Brazil, 1 in Spain, Japan, Canada, Greece, Australia, UK, and Colombia.
- Mission launch is scheduled for April, 2021.
- The planning of calibration/validation and development of science algorithms are the main contributions from the Science Team in the next year.

# **BACK-UP**

#### Land Contamination of Radar Waveforms



Coastalt.eu

#### SWOT SSH resolution in the global ocean



(For SWH= 2m)

Fu and Ublemann (2013)

### The limit of resolution of Jason-1/2



#### 1-day fast sampling orbit



## **CalVal Objectives**



#### An ocean observing system for the ocean CalVal

Deploy an array of 20 moored temperature and salinity sensors in the ocean 7.5 km apart to sample the upper ocean to resolve wavelengths from 15-150 km. The nadir altimeter will be the CalVal approach at wavelengths longer than 150 km.





#### Comparison of the in-situ observation errors to the SWOT SSH error requirement