SWOT Modeling over Yangtze middle reaches

General context: Swot modeling over FloodPlain & Wetland

- Human stakes: economy, hazards, health
- Flood response
- Global biodiversity
A general lack of information such as seasonal variations monitoring: great expect on SWOT

Set up a simulation workshop of SWOT data to generate valuable and precise information on river flows, reservoir and lakes storage and inundation extent

Application to Yangtze middle reaches: unique characteristic in term diversity of types of water bodies, water surface extent behaviors, huge water height variations
Approaches and objectives

Validate and run CNES-JPL SWOT Simulator

Yangtze middle watershed

Yangtze river: 1-2 km
3G reservoir: 1084 km²
2 to 2.5 km width
Dongting: 500-2500 km²
Poyang: 700-3300 km²
Anhui lakes: >10-100 km²
Workshop Yangtze database set up

- Water height from Gauge stations series
- Water height from Altimetrical series, Jason, RA Envisat…
- HR water extent series from MR and HR EO data (Take Five)
- VHR DEM from Tandem X, Pléiades HR
- Land Cover HR
- Meteorological information (rain, wind etc ...)
Answer to phase A SWOT issues

Validate the ability to generate SWOT hydrological products inscribed in the specifications of the mission to the flow of rivers every 10 km, and changes in water storage monitoring in lakes and reservoirs stocks of water contained in lakes, reservoirs and flood

• Investigate the spatial resolution, trying to define the limits of SWOT exploitation/applications to real water bodies (smallest, river swath, layover in steep sided reservoir..)
• Validate the measurements qualities (water height, storage characterization and monitoring
• Investigate the revisit impact ( at 30°N )