

10 Years of operations, synergies with EO missions #1.



Chairs: Jerome Bouffard and Tânia Casal

Five exciting talks covering a wide spectrum of topics and showcasing key components and challenges to be tackled for an operating mission such as CryoSat.

1. CryoSat: ESA's ice explorer mission. 10 years in space: status and future challenges: Tommaso Parrinello

- 11 years of CS-2 in space with **groundbreaking results**, mission extended till 2022 and going for extension request till 2025.
- Overall CryoSat mission status remain in **excellent shape**, from data acquisition until Cal/Val activities and the generation of high quality CryoSat products used by a growing and versatile user community. **TEMPO & EOLIS** concepts and synergy with Icesat-2-> **Cryo2Ice** activity are on-going success opening the door to many other applications (e.g. **snow retrieval** from Ku-La obs.).

2. Aging with grace: 10 years of CryoSat-2 flight operations: Giuseppe Albini

- An overview of operational tasks and achievements from FOS in support to CS-2 for more than a decade was presented
- More than 4000 days in orbit for CS-2, the team has been challenged with several anomalies over 11 years while **finding agile solutions** to address the spacecraft aging. This has become even more challenging in **COVID** times with some changes to harmonise remote working
- CryoSat has also demonstrated to be a valuable source of observations for many other applications beyond its original scope (Hydrosphere, Atmosphere, Geosphere **and even Geospace** !).

3. Quantifying Achievable Performance & Long Term Measurement Drift from 10 Years of CS-2 Data: Michele Scagliola & Steven Baker

- A reminder that such a success story can not be achieved without strong dedication and hard work from **CryoSat ESL**, to perform calibrations and ensure top quality and stability of our L-1 and L-2 core products, both fundamental to address **Climate Change** (core mission objectives).
- L1 data of excellent quality, L2 data as well, more than 300 million measurements from SIRAL Level 2 data products obtained to evaluate the stability of CryoSat's measurement system.



10 Years of operations, synergies with EO missions #1.



Chairs: Jerome Bouffard and Tânia Casal

4. CRISTAL: science objectives and status: Paolo Cipollini

- CryoSat's technology and scientific importance paved the way to new and future mission concepts, such as CRISTAL
- First high-resolution operational Radar Altimeter mission for the cryosphere with launch expected for 2027 (Copernicus Expansion Mission)
- Full Consortium with altimetry expertise (CS-2/S-6) established for Space segment Development

5. The Ice, Cloud and Land Elevation Satellite – 2 (ICESat-2) Mission: Status and Update: Thomas Neumann

- Advanced Topographic Laser Altimeter System (ATLAS) photon-counting lidar whose mission objectives are to measure ice sheet elevation change, sea ice freeboard, and enable global vegetation canopy height assessments
- Unprecedented high resolution measurements and new discoveries such as the ability to sample Arctic summer melt ponds or clear shallow waters in the Caribbean
- International cooperation with ESA is an asset, as demonstrated by #CRYO2ICE orbit change offering an unique opportunity to have coincident laser and altimeter data over polar areas, key to understand global climate.

