Cryosat-2 was planned for ice caps but has a great added value for ocean surfaces!

**Cryosat-2 Data**

- Cryosat-2 = Experimental altimetric mission, unique opportunity to have a preview of quality of SAR (future techniques for altimetry S3, Jason-CS...)
- SAR mode is extensively analysed, (see dedicated presentations about SAR, Jason CS, S3...) with respect to LRM mode

- To analyze geophysical large scale content and refine altimetry error budget

Thanks to a precise comparison with Jason-2 and separating Asc/Dsc passes over a period of homogenous mask, we could estimate and correct from a bias between LRM and pseudo LRM mode (1.3 cm). After correction, the transition is seamless and cannot be misinterpreted anymore in mesoscale content. This exercise can be done by comparison with pseudolRM, Tracker or SAR data.

**Bias detection**

- Cryosat-2 processing prototype (CPP) has been developed on CNES side to lay the ground for various SAR processing studies. These processing chains start from level-0 telemetry files and generate 20 Hz sea level anomalies (SLA) values.
- This processor highlights different features regarding the data quality of the CPP data sets which also gives some clues on Cryosat-2 mission performance.
- In this presentation, we use CPP 1Hz LRM data set.
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- CNES POD in GDR-D standards is also used.
- Over SAR zones, 1Hz pseudo LRM range is used = specific SAR processing to recover a telemetry files and generate 20 Hz Sea Level Anomalies (SLA) values.

- Consistency between Asc/Dsc tracks:
  - Mean difference at crossovers: Cryosat-2 presents a large scale effect (see A. Ollivier’s talk at POD session) compared to the Jason-2 (over the same period), not localized at the same place as Envisat mission. Could be investigated further orbit experts side.

- **Multimission fine Calval comparisons are precious**

- For the moment the MSL analysis was not our focus (also because of the rather short period) ... BUT ...
- When IOP/GOP will be available, a strong effort should be made to join the CPP and IOP/GOP time series global and geographic bias correction studies will be needed. Reprocessed GOP not planned by now 3 years missing out of interest for the community!!

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**Regionally correlated patterns**

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- **Potential role of C2 in MSL monitoring**

  - Cryosat-2 products are more dedicated to mesoscale analysis and not to MSL monitoring (several limitations due to the on board payload – no radiometer, single frequency, ...).
  - In this best effort product, some instrumental corrections (notably the PTR drift) are not taken into account (will be properly managed in IOP/GOP products). For instance, this explains a drift detected on Sigma0 (impact on MSL via SS8)

- **To compute fine biases between LRM and SAR exploratory zones**

- **To insure the continuity between past and future missions**

- Precise calval including multimission comparison = Precise knowing of the LRM to:
  - Insure the seamless transition between past and future missions
  - Insure a reliable reference to SAR exploratory studies

This should be done with the future ESA official products (IOP/GOP expected by end 2013)