Instrument Processing: Measurement and Retracking

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Recommendations (I)

We had a very rich IP session with 13 talks and 10 posters. These are the session highlights and recommendations:

- Sentinel6 RMC performance is proven to be within requirements. Although not originally designed for fully-focused SAR, the HR RMC mode can be exploited beyond its design, and it shall allow for fully focused techniques.

- Remedial solutions to mitigate the slope effects in LR-RMC have been implemented in on ground processing techniques (prototype), and LR-RMC does no longer present any sensitivity to it.

- Several talks presented the exploitation of fully-focused for a wide variety of applications
  - The application of this technique for hydrology, sea ice and open ocean requires further investigation, but initial results are promising and encouraging

Recommendations (II)

- A wide variety of processing techniques have been developed or tested. These include:
  - 'Range-walk' compensation for a more accurate beam steering and improved SWH retrievals.
  - Remedial solutions to mitigate the impact of geoid in Delay/Doppler maps
  - Comparison of level-1/level-2 algorithms for sea ice thickness and volume estimation
  - Higher posting rate of delay/Doppler to improve SNR over the ocean
  - Empirical corrections for intra 1-Hz correlations
  - Adaptive retracking to improve SWH retrieval
  - Numerical retracking (for Topex)
  - S3B and A tandem phase has allowed to compare P-LRM (in S3A) and LRM (in S3B) for a full cycle. P-LRM pulse to pulse correlation as presented by A. Egido et al. at OSTST 2017

- **Community request**: The release of calibration data

- All the work presented is promising and candidate for algorithm evolution, but further testing is of need to properly quantify the improvements.
  - A common benchmark should be defined to evaluate if an innovation is mature, and justifies its added value in operations