INA AC status report

S.Kuzin
Institute of Astronomy RAS

Two ways for DORIS Rinex data processing:

1) using Gipsy-Oasis II
2) development own software package

Gipsy-OASIS II: what was done

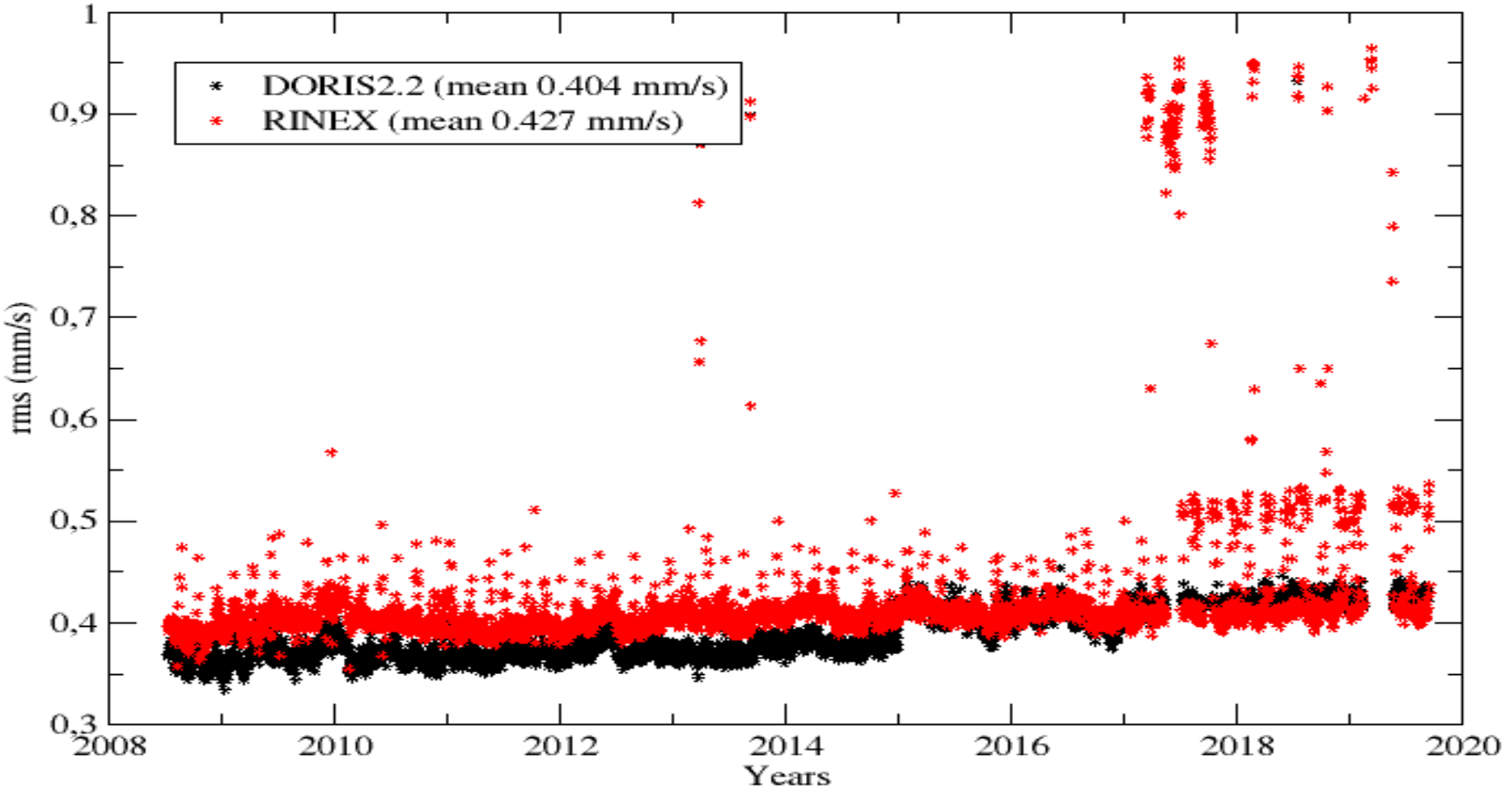
- Raw Rinex data were transformed to format suitable for Gipsy (method: J.-M. Lemoine and others, ASR, 2016, 58(12):2677-2690)
- Satellite models (CNES documentation) for all new DORIS satellites were implemented (HY2C, HY2D, Jason-3, Sentinel3A, Sentinel3B, Sentinel6A)
- Quaternion and solar panel files were implemented for Jason-1, Jason-2 and Jason-3

- Earth reference system DPOD2014_v55 was used
- Iono-free phase centers were used both satellite and ground antennas
- Elevation cutoff = 10 degrees
- Test for using de-aliasing model AOD1B was unsuccessful

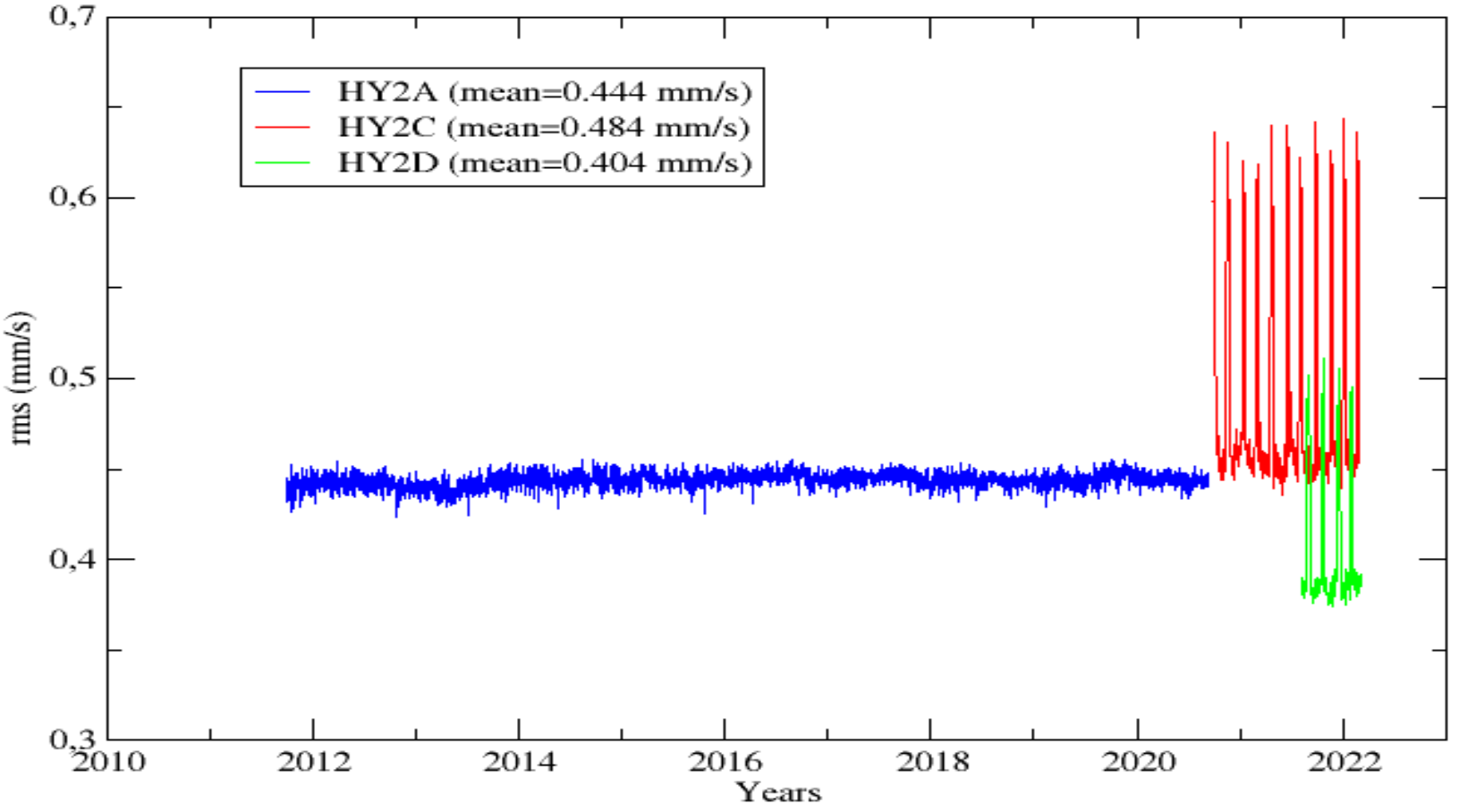
Currently DORIS Rinex data were processed for HY2A,C,D; Saral; Jason-2 satellites

Obtained only single satellite solutions

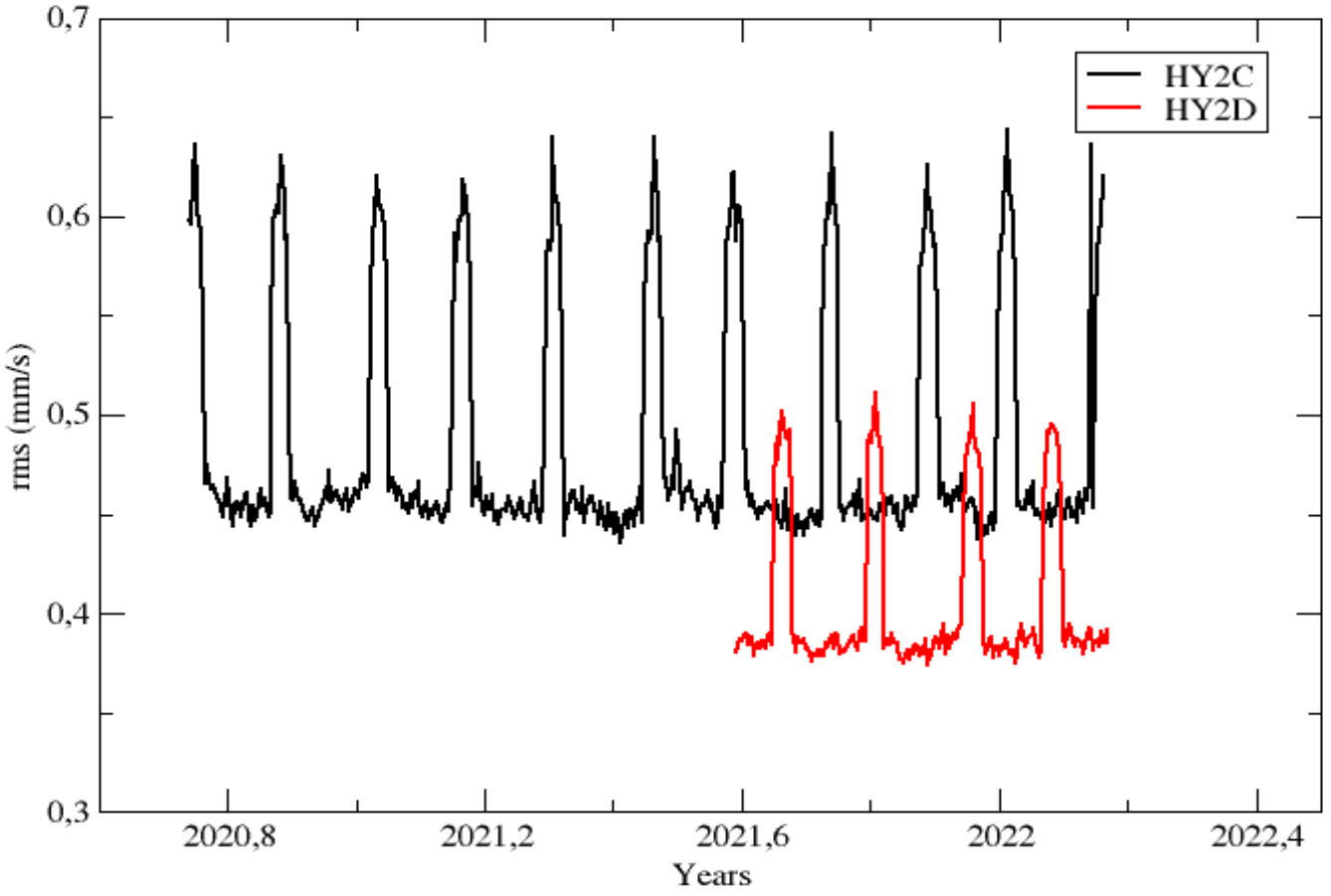
Jason-2 rms of fit from RINEX and DORIS2.2 data



RMS Rinex DORIS data processing for HY2A, HY2C, HY2D



RMS for HY2C, HY2D



Next steps

- Processing DORIS Rinex data for all satellites
- Obtaining merged solutions
- To implement quaternions processing for Cryosat-2 and Sentinel3A,B
- Delivery INA SINEX solutions to IDS for testing

Summary

- There is a good agreement between the RINEX DORIS data and DORIS2.2 (Jason-2)
- The quality of processing is at the same level when using DORIS RINEX data (for Jason-2)
- The DORIS RINEX RMS (0.427 mm/s) of fit is slightly higher as compared with DORIS2.2 (0.404 mm/s) data for Jason-2
- HY2C and HY2D rms have periodic character with the rising about each 2 months
- Oulined future plans