Update of the SAA corrective model for Jason1

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Update of the SAA model following the orbit change

Since May 4th 2012, the satellite Jason-1 has been moved to a geodetic orbit.

The corrective model for Jason-1 has been updated to take into account the new orbit of Jason-1. The main change is that we can not any more use the standard Topex mean ground track (determined over a 7-year period), since Jason-1 is now on a drifting orbit. For this new orbit, we had to add another capability to the model. We can now use an external orbit in sp3 format.

The new version of software based on sp3 orbit has the following upgrades:
- new routines to convert orbit to ground track
(entetesp3.f90, conv_orbsp3_orbgeo.f90, xyzflh.f90, angle.f90, egalite.f90, common_cons.f90)

-4 routines modified (modele.f90, hf_jason_doris_freq.f90, calcul_dfsat.f90 and interpol_datemes.f90)

- a new input file called « orbit_sp3 » in ANNEXE/ORBITE which contains the orbit file in sp3 format

How to use the new feature ?

When you use sp3 files in input, you have to give one or several sp3 orbit files concatenated in the file « orbit_sp3 » (in ANNEXE/ORBITE).
This file must cover the measurements period given by the measurements file ANNEXE/MESURE/Input (in free format or DORIS 2.2 CDDIS format, see technical note)

The software offers now 4 options, two options (3 and 4) being added by the new feature:
1) Input file measurement CDDIS (DORIS 2.2)
2) Input file measurement in free format (DATES in TAI)
3) Input file measurement CDDIS (DORIS 2.2) and sp3orbit
4) Input file measurement in free format (DATES in TAI) and sp3orbit

Before the orbit change, we can use Topex mean ground track or sp3 orbit files (options 1 to 4), and after change only sp3 files (options 3 and 4).

Remark
Before the orbit change (May 4th 2012), the file "jason_cycle_dates" was updated regularly by the Central Bureau. From now on, as it does not need anymore updates, the final version of this file is delivered with the model.

Update of the model parameters (regular update)

Update of the model by considering the news DORIS data since the last update
(data between February 20th 2009 and January 6th 2012).

Amplitude parameter has changed and the model has been modified.

Where can you find the model ?

The corrective model for Jason-1 DORIS Doppler data designed by CNES is available on the CB ftp site under:

ftp://ftp.ids-doris.org/pub/ids/satellites/CORRECTIVE_MODEL_JASON1

You can get this model and the technical note which gives the principle of the model and allows its implementation and its use