



Research activities for continued improvement in the DORIS contribution to the reference frame

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For the preparation of ITRF2008, the IDS processed data from 1993 to 2008, including data from TOPEX/Poseidon, the SPOT satellites and Envisat in the weekly solutions. Since the development of ITRF2008, the IDS has been engaged in a number of efforts to try and improve the reference frame solutions.

The first effort concerned a campaign to analyze in the detail the contribution of all satellites in 2009, and ascertain on a satellite by satellite basis how they contribute to geocenter and scale solutions of the DORIS combination. This analysis has revealed that two satellites are outliers, at least in 2009.

The second effort has focused on the contribution of the new DORIS satellites. Data from the new DORIS satellites, Jason-2 and Cryosat-2 were not included in ITRF2008. These satellites carry the DGXX 7-channel DORIS receiver, which can track up to seven beacons simultaneously. In a single week, Jason-2 alone effectively doubles the quantity of data available.

The third avenue of investigation was to begin the development of a routine IDS combination.

We report on the preliminary results from these three research activities and discuss the prospects for continued improvement in the DORIS contribution to the reference frame.