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We have developed a short-arc orbit technique for the validation of altimeter satellite precise orbits. It is based on SLR data, and on rigorous geometrical adjustment criterions. The goal is to permit the validation of altimetric missions orbits.
SLR sites around the world (Europe, US, Australia, Asia) largely contribute to the tracking of the altimetric mission, thanks notably to the role of the International Laser Ranging Service (ILRS) through its recommendations, its data storage and distribution, and its monitoring of the up-to-date activity (qualitative and quantitative monitoring).
Thanks to a selective choice of SLR measurements, taking into account their intrinsic precision/accuracy, and the precision of the station coordinates of the SLR network, the proper error budget of the method has been reduced to few mm.
This has allowed us to study the radial orbit error of SARAL/AltiKa for POE, MOE and DIODE orbits above a given area. For the radial component, stability is better than 2 cm for MOE and POE and better than 4 cm for DIODE. Geographically correlated radial orbit errors are small (below 1 cm for MOE and POE, 2 cm for DIODE).
OSTS session
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