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ITRF2020: An overview of its features and results

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Abstract. The ITRF2020 was the occasion to better describe the shape of the deforming Earth's surface by an accurate and consistent modelling of nonlinear station motions induced by various geophysical processes. The ITRF2020 is an augmented reference frame where the temporal station positions are modelled by a linear part, and parametric functions describing annual and semi-annual deformation caused mainly by loading effects, as well as Post-Seismic Deformation (PSD) for stations subject to major earthquakes. The paper discusses the ITRF2020 new analysis strategy that integrates time series of station positions and Earth Orientation Parameters provided by the IAG technique services of the four space geodesy techniques (DORIS, GNSS, SLR, VLBI). It evaluates the performance of the main ITRF2020 features, namely the seasonal signals embedded in the station position time series, the corresponding geocenter motion, that is the motion of the Center of Mass with respect to the Center of Figure of the solid Earth surface, as well as the PSD parametric functions.