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Review of the ITRF datum definition implementation

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Unlike the previous ITRF solutions, the future ITRF versions starting with the ITRF2004 will be based on time series of station positions and Earth Orientation Parameters. In light of time series combination, this paper will discuss the current status of the ITRF datum characteristics, e.g. origin, scale, orientation and time evolution. Particular emphasis will be given to the current assessment of geocenter motion, scale variation and its coupling with station vertical motions and the accuracy of the No-Net-Rotation implementation. Some recent results of time series combination will be used to discuss the datum parameters and their temporal stability. The impact of core sites on the datum definition as well as the local ties in co- location sites will be assessed. Detected non-linear and seasonal variations of the analyzed time series as well as their statistical significance will be addressed and their impact on the datum parameters will be evaluated.