



Evolution of IERS Conventions models

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The IERS main products are the celestial and terrestrial reference frames, ICRF and ITRF, and the set of Earth orientation parameters to transform between them. Because several independent techniques are used to generate ITRF, its quality strongly depends on using a consistent and complete set of models and procedures in the realization. The IERS Conventions are designed to provide these. In the direct or indirect scope of the Conventions we find 1. The displacement of the reference markers on the crust. 2. The precise definition and the displacement of the reference points of instruments (including auxiliary points e.g. satellite reference points).

Category 1 is the core work of the IERS Conventions center while category 2 are technique-dependent conventions to be determined in accordance with technique centers. Since the issuance of the IERS Conventions (2003), the IERS Conventions center has worked, with the help of its Advisory board, in the aim of providing an up-to-date product. Work carried out so far mostly concerns items in the first category above, specifically: the provision of a model for ocean pole tide loading (an effect previously not considered), both for its effect on the geopotential and for the displacement associated to the loading; a major update of the section covering the ocean tide loading; a model for the atmospheric tides; new models for tropospheric propagation.

Other items currently under review are: the treatment of geocenter motions, in order to provide/use a consistent realization of the geocentric frame; an improved model for the subdaily EOP variations; the documentation of technique-specific effects, which are best realized at the level of each technique center, and are presently in various states of progress.