

Consideration of a Global Vertical Reference System in the IERS Conventions

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Based on the classical and modern observations, the IAG ICP1.2 on Vertical Reference Frames studied the consistent modelling of both, geometric and gravimetric parameters, and provides the fundamentals for the installation of a unified global vertical reference frame.

The objectives of ICP1.2 are:

- To elaborate a proposal for the definition and realization of a global vertical reference system
- To derive transformation parameters between different regional vertical reference frames
- To establish an information system describing the various regional vertical reference frames and their relation to a world height system.

Result of the works is a proposal for conventions about the definition and realization of a global vertical reference system. The realization of a global vertical reference system needs to be based upon the combination of positioning using geodetic space techniques, levelling, gravity, tide gauge observations and a global gravity model.

The consideration of the relationships to the existing ITRS conventions shows inconsistencies relating the Permanent Tide and Numerical Standards. The presentation will discuss solutions and necessary further investigations.