Ingenieurfakultät Bau Geo Umwelt

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Titel des Beitrags: Definition and proposed realization of the International Height Reference System (IHRS)

Abstract: Studying, understanding and modelling global change require geodetic reference frames with an order of accuracy higher than the magnitude of the effects to be actually studied and with high consistency and reliability worldwide. The International Association of Geodesy, taking care of providing a precise geodetic infrastructure for monitoring the Earth system, promotes the implementation of an integrated global geodetic reference frame that provides a reliable frame for consistent analysis and modelling of global phenomena and processes affecting the Earth's gravity field, the Earth's surface geometry and the Earth's rotation. The definition, realization, maintenance and wide utilization of the International Terrestrial Reference System guarantee a globally unified geometric reference frame with an accuracy at the millimetre level. An equivalent high precision global physical reference frame that supports the reliable description of changes in the Earth's gravity field (such as sea level variations, mass displacements, processes associated with geophysical fluids) is missing. This paper addresses the theoretical foundations supporting the implementation of such a physical reference surface in terms of an International Height.
Reference System and provides guidance for the coming activities required for the practical and sustainable realization of this system. Based on conceptual approaches of physical geodesy, requirements for a unified global height reference system are derived. In accordance with the practice, its realization as International Height Reference Frame is designed. Further steps for the implementation are also proposed.

Stichworte:
World height system, global vertical reference system, geodetic global reference frame, international height reference system and frame

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