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# Space-Time Reference Systems for Monitoring Global Change and for Precise Navigation in Space

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Reference systems are an indispensable component for the description of the geometry and the kinematics of the Earth and other objects in space. Since the determination of geometrical properties of these objects has gained more and more relevance, the issues of the appropriate reference systems became even more important. For these reasons, a group of scientists in Germany, Austria and Switzerland is being funded by the German Science Foundation (DFG) since early 2012 to develop integrative methods and procedures for a consistent definition and realization of reference systems on Earth and in space. Although many realizations of reference systems exist already, they are used independently and suffer from inconsistencies. In an environment of ever increasing observing capabilities as well as of social and scientific needs, a framework of reference systems will be produced which are linked consistently with an appropriate level of accuracy to guarantee a solid basis for measuring geometric effects of Global Change and for high-precision navigation near Earth and in deep space.