International Terrestrial Reference System

Responsible Organization: International Earth Rotation and Reference Systems Service (IERS)

Abbreviated System Name: ITRS

Coverage of System: Global

Type of System: 3-Dimensional

Brief Description

A spatial reference system co-rotating with the Earth in its diurnal motion in space. In such a system, positions of points attached to the solid surface of the Earth have coordinates which undergo only small variations with time, due to geophysical effects (tectonic or tidal deformations).

Definition of System

- **Origin**: It is geocentric, its origin being the center of mass for the whole Earth, including oceans and atmosphere
- **Scale**: The unit of length is the meter (SI). The scale is consistent with the TCG time coordinate for a geocentric local frame, in agreement with IAU and IUGG (1991) resolutions. This is obtained by appropriate relativistic modelling
- **Orientation**: Its orientation was initially given by the BIH orientation at 1984.0
- **Time Evolution**: The time evolution of the orientation is ensured by using a no-net-rotation condition with regards to horizontal tectonic motions over the whole Earth.

Coordinate System: Cartesian coordinates (X, Y, Z)

References

- IERS Conventions (2010): http://tai.bipm.org/iers/convupdt/convupdt.html