

ISO 16695:2014-02 (E)

Space environment (natural and artificial) - Geomagnetic reference models

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Reference frames	1
2.1	General	1
2.2	Geocentric reference frame	2
2.3	Geodetic reference frame	2
2.4	Geodetic to geocentric coordinate transform	3
3	Specification of the geomagnetic field vector	3
3.1	General	3
3.2	Magnetic vector components in the geocentric frame	4
3.3	Magnetic elements in the geodetic reference frame	4
3.4	Transform of magnetic vector components from geocentric to geodetic frame	6
4	Specification of the geomagnetic reference model	6
4.1	Potential of the magnetic field	6
4.2	Geomagnetic reference radius	8
4.3	Epoch of a sub-model	8
4.4	Validity of a sub-model	8
4.5	Time-dependence of Gauss coefficients	8
4.6	Calculation of magnetic vector components in the geocentric reference frame	9
4.7	Spatial wavelength	10
4.8	Root-mean-square difference between two model fields	10
5	Examples of the use of geomagnetic reference models	11
5.1	Compute reference magnetic elements near the Earth's surface	11
5.2	Compute reference magnetic vector in near-Earth space	11
5.3	Compute reference magnetic vector in magnetosphere	12
Annex A (informative) Available geomagnetic reference models		13
Bibliography		18