

Geodetic Reference System 1980 (GRS80)

adopted by the International Association of Geodesy (IAG) during the General Assembly 1979. Principal parameters are:

parameter	symbol	value
defining constants		
equatorial radius of the Earth	a	6378137 m
geocentric gravitational constant (including the atmosphere)	GM	$3986005 \cdot 10^8 \text{ m}^3 \text{ s}^{-2}$
dynamical form factor (excluding permanent tides)	J_2	$108263 \cdot 10^{-8}$
angular velocity of the Earth	w	$7292115 \cdot 10^{-11} \text{ rad s}^{-1}$
derived geometrical parameters		
semiminor axis (polar radius)	b	6356752.3141 m
first excentricity	e^2	0.00669438002290
flattening	f	1 : 298.257222101
mean radius	R_1	6371008.7714 m
radius of sphere with same surface	R_2	6371007.1810 m
radius of sphere with same volume	R_3	6371000.7900 m
derived physical parameters		
normal potential at ellipsoid	U_0	$62636860.850 \text{ m}^2 \text{ s}^{-2}$
Normal gravity at equator	g_e	$9.7803267715 \text{ m s}^{-2}$
Normal gravity at pole	g_p	$9.8321863685 \text{ m s}^{-2}$

wb 09/1999

Comments & suggestions