Spherical harmonic coefficients file format

The header file occupies one line and consists of two attribute data, namely the Geocentric gravitational constant GM (×10¹⁴) and Equatorial radius of the Earth a (m).

The spherical harmonic coefficients corresponds to GM and a. For different spherical harmonic coefficients models, GM and a are not necessarily the same.

The n-th degree m-th order spherical harmonic coefficient is expressed by a record with the format "degree n, order m, C_{nm}, S_{nm} (, C_{nm} error, S_{nm} error)".

PALGrav4.0 does not require the degrees and orders of harmonic coefficients to be arranged, and allows to exist insufficient orders. For the harmonic coefficient of insufficient order, PALGrav4.0 automatically sets to zero.

When PALGrav4.0 program uses a geopotential coefficients model file to calculate the model gravity field elements, the geopotential coefficients based on the GM and the a are automatically converted into those based on the GM and the a of the default earth ellipsoid.