

Sweden (SWEN17_RH2000)

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Description:

SWEN17_RH2000 is a Swedish height correction model that has been computed by adapting the Nordic/Baltic gravimetric quasigeoid model NKG2015 to the Swedish three-dimensional reference system SWEREF 99 (ETRS89 realization) and to the modern Swedish height system RH 2000 (EVRS realization). It is referred to the GRS 80 ellipsoid and extends from 54°N to 74°N and from 10°E to 25°E with a grid spacing of 0.6'x1.2'. The model includes permanent tide and postglacial land uplift corrections and is derived by adding a smooth residual surface to the gravimetric NKG2015 model (slightly modified by adding some new gravity data over Sweden). The residual surface is computed by least squares collocation based on an updated Swedish GNSS/levelling dataset. The standard uncertainty of SWEN17_RH2000 has been estimated to 8-10 mm everywhere on the Swedish mainland, Öland and Gotland with exception of a few areas where the uncertainty is larger. These areas are in the far north on the border to Norway and in Lake Vättern (standard uncertainty approximately 2-3 cm) and the highest mountains to the north-west, depending on the difficulties to model a gravimetric model in mountainous areas (standard uncertainty about 2-4 cm). The standard uncertainty at sea is also larger; some 2-4 cm in coastal waters and probably around 5-10 cm further out at sea.

References:

J. Ågren, C. Kempe, L Jivall (2018). Noggrann höjdbestämning med den nya nationella geoidmodellen SWEN17_RH2000. Presented in Swedish at the conference Kartdagarna March 20-22, 2018.

Grid formats:

The grid is made available in three different formats:

1. GRAVSOFTH ASCII-format (*.txt)
2. GRAVSOFTH binary format (*.grd)
3. A row-wise ASCII format with one height anomaly per row with the latitude and longitude explicitly given using the same order as in the GRAVSOFTH ASCII-format (*.dat)