

Regional geoid modelling in the area of subglacial Lake Vostok, Antarctica

– Electronic supplementary material –

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Description of data grid

Data records form a regular but not equiangular grid with 600 m spacing in polar stereographic projection (71°S standard parallel).

A description of data columns can be found in Table 1.

Height anomalies (quasigeoid heights) were estimated by means of 3-d least-squares collocation in a remove–compute–restore approach. For that, regional airborne gravity and topography data (Studinger, 2003) were combined with the global geopotential model GOCO03S (at full degree and order). The height anomalies were then converted to geoid heights using the gravity data and a density model. For more details on the method see Schwabe et. al. (2013).

The estimated uncertainty of the height anomalies is ± 0.05 m.

To reference this dataset please cite

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Studinger, M., R.E. Bell, G.D. Karner, A.A. Tikku, J.W. Holt, D.L. Morse, T.G. Richter, S.D. Kempf, M.E. Peters, D.D. Blankenship, R.E. Sweeney, V.L. Rystrom (2003): Ice cover, landscape setting, and geological framework of Lake Vostok, East Antarctica. *Earth Planet Sc Lett* 205 (3–4) 195210, doi:10.1016/S0012-821X(02)01041-5.

Table 1: Format description of ASCII grid file and metadata

column	quantity	unit	tide system	reference ellipsoid
1	longitude	degrees	not applicable	WGS84
2	latitude	degrees	not applicable	WGS84
3	ellipsoidal surface height	m	not applicable	WGS84
4	height anomaly	m	mean-tide	WGS84
5	geoid heights	m	mean-tide	WGS84