

400 m Bouguer gravity merged grid of Western Australia 2020 version 1

GRID DESCRIPTION

This grid combines onshore Complete Spherical Cap Bouguer gravity anomalies with offshore Free-air anomalies for Western Australia.

Ground data over the continental region has been extracted from the Australian National Gravity Database (ANGD). It has been corrected for terrain effects. The ground data has been merged with 23 airborne vertical gravity and gravity gradiometer surveys acquired at various line spacings.

Offshore Ellipsoidal Free-air gravity anomalies are based on gravity (V16.1) and topography (V9.1) data extracted from the Marine Gravity from Satellite Altimetry dataset (Sandwell and Smith, 1997, 2005).

The grid file is supplied in ERMapper/Intrepid format. The horizontal datum and projection are GDA94, GEODETIC. The grid cell size is 0.00416666 degrees (approx 400 metres).

WA_400m_Grav_Merge_v1_2020.ers Bouguer gravity (onshore) and Free-air gravity (offshore). Units are micrometres per second squared (μms^{-2}) which is equivalent to 0.1 milligals.

The recommended reference for this grid is:

Brett, JW 2020, 400 m Bouguer gravity merged grid of Western Australia 2020 version 1: Geological Survey of Western Australia, <www.dmp.wa.gov.au/geophysics>.

IMAGE DESCRIPTION

The image file is supplied in JP2 format, an image compression standard and coding system. JP2 files can be viewed using *ER Viewer* and various GIS applications.

WA_400m_Grav_Merge_v1_2020.jp2 is an image of the corresponding grid. Units are μms^{-2} . The data are displayed as a pseudo colour image with overhead illumination (azimuth 0° , elevation 80°). Values from low to high are represented by colours blue to red.

The **Kmz** file is supplied in Google Earth compatible format.

WA_400m_Grav_Merge_v1_2020.kmz

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Bibliographic References:

Wynne, P., and Bacchin, M., 2009. Index of Gravity Surveys (Second Edition). Geoscience Australia, Record 2009/07

Wynne, P., 2009. AUSTRALIAN NATIONAL GRAVITY DATABASE 0.5 MINUTE OFFSHORE - ONSHORE GRAVITY GRID. Geoscience Australia.

Sandwell, D.T., and Smith, W.H.F., 1997, Marine gravity anomaly from Geosat and ERS 1 satellite altimetry: *Journal of Geophysical Research*, v. 102, No. B5, p. 10039-10054.

Sandwell, D.T., and Smith, W.H.F., (2005), Retracking ERS-1 altimeter waveforms for optimal gravity field recovery: *Geophysical Journal International*, 163 (1), p. 79–89.

Acknowledgements:

Offshore free-air gravity anomalies used in the production of this grid are derived from data extracted out of the *Marine Gravity from Satellite Altimetry* dataset available at http://topex.ucsd.edu/marine_grav/mar_grav.html

These data were used with the permission of David Sandwell and Walter Smith.

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LICENCE



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