Abstract. GEBCO\_08 is a continuous terrain model covering land and sea on a 30 arcsecond grid. The ocean portion between 64°N and 81°S is largely based on the SRTM30\_Plus V5 bathymetric model, upon which other regional grids and some survey data sets are included. Periodically GEBCO\_08 is updated; it is being evaluated now for update with SRTM30\_Plus V7. V7 contains additional edited soundings and multibeam surveys not included in V5, and is based on the improved Smith and Sandwell (1994) version 14.1 bathymetry model (SRTM30\_Plus V5 is based on version 11.1). However, V7 is copyrighted by the Regents of the University of California.

The Smith and Sandwell bathymetry model interpolates gaps between ship depth measurements with depths estimated from satellite gravity data. We compare two interpolated regions in GEBCO\_08 and SRTM30\_Plus V7 to regional "ground truth" multibeam surveys that were not incorporated into either grid. In the Pacific Ocean study area, the standard deviations of the differences between multibeam depths and GEBCO\_08 or SRTM30\_Plus V7 depths are similar (78 m and 71m, respectively). When the depth differences are between multibeam and control points only in SRTM30\_Plus V7, the standard deviation is 85 m. In this study area, the additional SRTM controls may not be improving the SRTM solution. In the Cape Verde study area, the standard deviations of the differences between multibeam depths and GEBCO 08 or SRTM30\_Plus V7 depths are also similar (247 m and 215 m, respectively), although larger than in the Pacific Ocean area due to the presence of seamounts and islands. However, the smaller standard deviation between multibeam depths and control points only in SRTM30\_Plus V7 (151 m) suggests that in this study area, the additional SRTM controls may be improving the SRTM solution. Maps of depth differences between GEBCO\_08 and SRTM30\_Plus V7 covering both study areas show long-wavelength depth differences that may be due to the additional controls in SRTM.

The value of updating to V7 is equivocal at this time. Additional comparisons would be helpful.

# 30 arc-second grid

For more details: gridded\_bathymetry\_data



## Cape Verde Study Area



• Depths are from GEBCO\_08, control points are black dots



points are black dots

• RSS Charles Darwin cruise cd163 multibeam survey is red

## Comparisons of GEBCO\_08 and SRTM30\_Plus V7 Grids in Regions of **Interpolated Bathymetry**

<sup>1</sup>NOAA Laboratory for Satellite Altimetry, College Park, Maryland, USA <sup>2</sup>British Oceanographic Data Centre, Liverpool, UK

## GEBCO\_08

- Global continuous terrain model for ocean and land on a
- Bathymetric portion of the current version (20100927, Oct. 2010) is based on SRTM30\_Plus V5 (Becker et al., Marine Geodesy, 2009) between 64°N and 81°S
- Additional grids covering various seas and the Arctic have been incorporated into the current GEBCO\_08 grid (see source identifier grid to the right)
- GEBCO\_08 is updated periodically, it is being evaluated now for update with SRTM30\_Plus V7

http://www.gebco.net/data\_and\_products/

grid

gravity with ship soundings

• SRTM30\_Plus V5 is based on S&S version 11.1, SRTM30 Plus V7 is based on S&S version 14.1

- SRTM30 Plus V7 differs from V5:
- surveys

### For more details:



• Depths are from SRTM30\_Plus V7, control

• Black dots circled by yellow are control points in SRTM30\_Plus V7 that are not in GEBCO\_08



V7 from GEBCO\_08

topography elevations in grid cell

• Cause of long-wavelength differences unknown