The DNSC07MSS global Mean Sea surface and mean dynamic topography from multi-mission radar altimetry.

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The new DNSC07MSS is an ocean wide pure satellite derived mean sea surface with a spatial resolution of 1 arc-minute by 1 arc-minute covering all marine regions of the world including the Arctic Ocean up to the North Pole. DNSC07MSS was derived using satellite altimetry from 15 years of repeat track altimetry (TOPEX/ERS2/GFO) supplemented with ERS-1 and GEOSAT geodetic missions, retracked using a highly advanced expert based system of multiple retrackers. This enables accurate ranging to both the open ocean surface and to all ice-covered regions within the +/- 82° of latitude coverage of the ERS satellites. Augmenting these data with ICESat lowest level filtered data (in order to get information from the leads between the ice-floats) increases this to 86N. From here on the PGM07 geoid was patched in up to the North Pole. The DNSC07MSS can be used with the equally degree geoid (2160) Earth Gravitational Model designated PGM07B to obtain a consistent mean Dynamic Ocean Topography model.

The mean sea surface is provided with a set of annual variability coefficients for the 1993-2007 period enabling the user to derive a temporal subset with consistent mapping of sea level variability for comparison with hydrodynamic models.