

Ocean Sci. Discuss., referee comment RC2
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Reply on RC1

Anonymous Referee #2

Referee comment on "The new CNES-CLS18 global mean dynamic topography" by Sandrine Mulet et al., Ocean Sci. Discuss., <https://doi.org/10.5194/os-2020-117-RC2>, 2021

I agree on the comment of referee #1 that this is a well written manuscript that nicely describes the updated methodology to produce the MDT and presents striking improvements of the new MDT compared to older versions.

What I would like to see are comparisons with geodetic MDTs that apply new combined geoid models using GOCE data (XGM, SGG-UGM, GOCO05c, GECO). In l48 it is stated, that for spatial scales shorter than 100km other information than those provided by geodetic MDTs alone is needed. But actually, when applying combined geoid models clearly signal is found below 100 km scale. This has been shown at least for the Gulf Stream and the Kuroshio (Siegismund 2020). I'm pretty sure the CNES-CLS18 MDT resolves shorter scales than any geodetic MDT, but to show this would even underpin the additional value of the new CNES-MDT compared to any pure geodetic MDT.

Minor points:

225, 227, 267, 272 : I guess, Rio (2012) is the right reference.

A lot of 'section 0' is found (101,113,123,258).