The a-priori dynamic topography is geo-sphcap. We can "correct" our altimeter-geoid MDT with high resolution information from a-priori information. Making use of a-priori information, we generate an "altimetric" sea surface topography as "altimetric" sea surface height = "true" dynamic topography + "true" geoid. Then we generate an "observed" geoid by smoothing the "true" geoid...

The RR MDT fields have higher resolution features than the equivalent direct method MDT. The differences between the RR MDT and direct method MDT for 9 different filters—6 spatial and 3 spectral—are obvious in the geographical filtered fields... and corrects the offsets of enclosed seas.

Spatial or Spectral Filtering?

We can remove the short scale features by applying a filter to the observed dynamic topography field. We can do this in geographical space, or in spectral space, by transforming the field to spherical harmonics... and applying filtering in the spectral domain reduces some of the coastal effects obvious in the geographical filtered fields...

Dynamic Topography Filtering: a methodology for investigating different procedures

We choose a "true" dynamic topography from a 1/4° ocean model with data assimilation (OCCAM) and generate an "altimetric" sea surface height = "true" dynamic topography + "true" geoid...

...and an "observed" dynamic topography as "altimetric" sea surface height - "observed" geoid

Short scale features are from both the true dynamic topography and the unresolved short scale geoid; we need to remove these—best to do it?

The Remove-Restore Method: Making use of a-priori information

We can "correct" our altimeter-geoid MDT with high resolution information from an a-priori MDT—see the poster on "Towards a first prototype" (Rio et al.) for an example. The a-priori dynamic topography is taken from a different ocean model (EGCO) with data assimilation.

The difference between the RR MDT and direct method MDT for 9 different filters—6 spatial and 3 spectral—are obvious in the geographical filtered fields... and corrects the offsets of enclosed seas.

Spatial or Spectral Filtering?

We can remove the short scale features by applying a filter to the observed dynamic topography field. We can do this in geographical space, or in spectral space, by transforming the field to spherical harmonics... and applying filtering in the spectral domain reduces some of the coastal effects obvious in the geographical filtered fields...

Dynamic Topography Filtering: a methodology for investigating different procedures

We choose a "true" dynamic topography from a 1/4° ocean model with data assimilation (OCCAM) and generate an "altimetric" sea surface height = "true" dynamic topography + "true" geoid...

...and an "observed" dynamic topography as "altimetric" sea surface height - "observed" geoid

Short scale features are from both the true dynamic topography and the unresolved short scale geoid; we need to remove these—best to do it?

The Remove-Restore Method: Making use of a-priori information

We can "correct" our altimeter-geoid MDT with high resolution information from an a-priori MDT—see the poster on "Towards a first prototype" (Rio et al.) for an example. The a-priori dynamic topography is taken from a different ocean model (EGCO) with data assimilation.

The difference between the RR MDT and direct method MDT for 9 different filters—6 spatial and 3 spectral—are obvious in the geographical filtered fields... and corrects the offsets of enclosed seas.

Spatial or Spectral Filtering?

We can remove the short scale features by applying a filter to the observed dynamic topography field. We can do this in geographical space, or in spectral space, by transforming the field to spherical harmonics... and applying filtering in the spectral domain reduces some of the coastal effects obvious in the geographical filtered fields...

Dynamic Topography Filtering: a methodology for investigating different procedures

We choose a "true" dynamic topography from a 1/4° ocean model with data assimilation (OCCAM) and generate an "altimetric" sea surface height = "true" dynamic topography + "true" geoid...

...and an "observed" dynamic topography as "altimetric" sea surface height - "observed" geoid

Short scale features are from both the true dynamic topography and the unresolved short scale geoid; we need to remove these—best to do it?

The Remove-Restore Method: Making use of a-priori information

We can "correct" our altimeter-geoid MDT with high resolution information from an a-priori MDT—see the poster on "Towards a first prototype" (Rio et al.) for an example. The a-priori dynamic topography is taken from a different ocean model (EGCO) with data assimilation.

The difference between the RR MDT and direct method MDT for 9 different filters—6 spatial and 3 spectral—are obvious in the geographical filtered fields... and corrects the offsets of enclosed seas.

Spatial or Spectral Filtering?

We can remove the short scale features by applying a filter to the observed dynamic topography field. We can do this in geographical space, or in spectral space, by transforming the field to spherical harmonics... and applying filtering in the spectral domain reduces some of the coastal effects obvious in the geographical filtered fields...

Dynamic Topography Filtering: a methodology for investigating different procedures

We choose a "true" dynamic topography from a 1/4° ocean model with data assimilation (OCCAM) and generate an "altimetric" sea surface height = "true" dynamic topography + "true" geoid...

...and an "observed" dynamic topography as "altimetric" sea surface height - "observed" geoid

Short scale features are from both the true dynamic topography and the unresolved short scale geoid; we need to remove these—best to do it?