



Sea level fingerprint fitting to GRACE and Altimetry

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Sea level rise is expected to have a profound impact on highly populated coastal areas and coastal defense infrastructures. It is therefore important to assess the different contributors, varying from thermal expansion and melting to post-glacial rebound (PGR), and their associated accuracies. Each contributor has a spatially varying impact as the gravitational attraction of the changing masses will yield a non-uniform sea level response. Joint inversion techniques have the potential to aid in the separation of those signals, where the patterns are assumed to be fixed and its magnitudes unknown.

In this study we use a combination of GRACE and altimetry, to separate a dedicated set of fingerprints representative for ice melting, steric expansion and PGR. We present results on the stability of the inversion, taken from a formal viewpoint. Furthermore, preliminary inversion results will be put in perspective with existing estimates.