



The JPL RL05M GRACE Mascon Solution

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The JPL RL05M GRACE mascon solution parameterizes monthly variations in the Earth's gravity field using 3 degree equal-area spherical cap mass concentration functions. A regularization scheme that relies on spatial and temporal a priori correlations is implemented to remove correlated errors during the gravity inversion. A coastline resolution improvement (CRI) filter has been developed to reduce leakage errors across coastlines. The solution has been shown to represent an improvement over traditional spherical harmonic solutions, in particular for ocean applications. Here, we summarize the solution strategy, important scientific results that have been enabled by the solution (such as sea level, groundwater, ice mass, and AMOC studies) and provide general guidance on usage. We will additionally discuss measurement and leakage errors with respect to JPL RL05M. Finally, with a look to the future, initial results from a potential 1 degree mascon solution utilizing a similar solution strategy will be shown.