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Evaluation of High-Frequency Oceanographic Signal in ITG-Grace2010 Using Altimetry

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The temporal sampling of the ITG-Grace2010 series allows for daily resolution of oceanographic signals, albeit with poorly-known high-frequency correlations and error characteristics. Over large regions, ITG-Grace2010 is negatively correlated with the atmosphere and ocean dealiasing (AOD) product used as a high-frequency model during GRACE processing, especially in areas with high variability. In order to assess whether the change from the background model is correct, we compare daily data to sea surface heights from Jason-1 and Jason-2, uncorrected for high-frequency barotropic variations. Preliminary comparisons suggest that the ITG-Grace2010 series more accurately represents the ocean bottom pressure in the southern Pacific than the unmodified AOD model does, in that it removes more variance from altimetry. Additional comparisons are done in other regions to assess whether the improvement is a local or global phenomenon.