



## Insights into the Earth System mass variability from CSR-RL05 GRACE gravity fields

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The next-generation Release-05 GRACE gravity field data products are the result of extensive effort applied to the improvements to the GRACE Level-1 (tracking) data products, and to improvements in the background gravity models and processing methodology. As a result, the squared-error upper-bound in RL05 fields is half or less than the squared-error upper-bound in RL04 fields. The CSR-RL05 field release consists of unconstrained gravity fields as well as a regularized gravity field time-series that can be used for several applications without any post-processing error reduction.

This paper will describe the background and the nature of these improvements in the data products, and provide an error characterization. We will describe the insights these new series offer in measuring the mass flux due to diverse Hydrologic, Oceanographic and Cryospheric processes.