

Space Geodesy Contributions to Gravity Model Development

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The past decade has seen the implementation of the first suite of dedicated satellite gravity missions. Achievements include the remarkable advances in the accuracy of the mean gravity model as well as the paradigm shifting developments associated with the monthly measurement of the time varying gravity. Measurements of the gravity signal associated with continental aquifer mass change, polar ice mass change, mass contribution to sea level change, ocean bottom currents and basin scale total water storage have gravity signals that can be measured to support studies of the climate change processes. The current advances have evolved from early advances in the space geodesy field. This presentation will review some of these foundational accomplishments, with an emphasis on the role of SLR, summarize the current status of the gravity model development and briefly discuss the future developments in the field.