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Geodesy and Global Fluid Modeling

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The Earth is a dynamic system—it has fluid, mobile atmosphere and oceans, a continually changing distribution of ice, snow, and groundwater, and a fluid core undergoing hydromagnetic motion. In the frame of the increasing precision of the observational geodesy (such as improvements in Earth orientation and reference frame determination, new space gravity missions, surface displacement measured by global networks), numerous previously negligible phenomena and approximations now reach the precision level of the observations. The interpretation of geodetic data continually needs a better modeling of physical processes within the global geophysical fluid layers (ocean, atmosphere and hydrosphere). At the same time, the precision of these observations permits their use to infer new insights concerning these fluid layers and their interactions. This paper will provide the introduction for this session stressing the synergy among these fields of research.

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