Sea Level from a geodetic perspective

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Geodesy measures the geometry and geometry changes of the ocean surface as well as of land and land ice surfaces. It also observes the Earth's gravitational field and its temporal changes due to mass redistributions in the Earth system as well as variations in the Earth rotation axis and speed. Brought together, these observations provide a wealth of information on past and present sea level changes and its causes, on ocean dynamics, ocean-ice interactions and other geophysical coupling phenomena.

The presentation illustrates geodetic contributions to the investigation of sea level changes, with some focus on ice sheet contributions. It also addresses current challenges, such as systematic errors in the individual observation techniques and their implications for strategies of technique combination.