Science of Sea Level Changes

All mass movements on the Earth surface:
- change the geoid (gravity field);
- displace the ocean bottom and land surface vertically;
- redistribute water mass in the oceans.

LSL changes caused by redistribution of mass in the global water cycle are the difference between the local changes in geoid and ocean bottom height plus an offset for the mass change in the ocean.

We can compute these LSL changes using the integral equation that links the mass redistribution over the whole surface of the Earth (including the oceans) to LSL changes.