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Long-term Atmosphere and Ocean Induced Mass Variations and an Example of their Use in SLR Analysis

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In GRACE gravity field variation analysis the non-tidal, atmosphere and ocean induced mass variations are a priori removed via the so-called de-aliasing products (AOD) available e.g. from the GFZ Information System and Data Center (ISDC). An effort at GFZ yielded an expansion of the available AOD products back in time to the pre-GRACE era. The consistency of the series in the long-term is particularly examined. They are then used in the analysis of a 14 year long time series of weekly solutions from LAGEOS-1 and -2 Satellite Laser Ranging (SLR) data. The results are specifically evaluated with focus on signals in the long wavelengths part of the Earth's gravity field. The historical AOD products will also be made available to the community via the GFZ ISDC.