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Coastal sea level changes in Africa from retracked Jason altimetry over 2002-2020

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Climate-related sea level changes in the world coastal zones result from the superposition of the global mean rise due to ocean warming and land ice melt, regional changes mostly caused by non-uniform ocean thermal expansion and salinity changes, and small-scale coastal processes (e.g., shelf currents, wind & waves changes, fresh water input from rivers, etc.). So far, satellite altimetry has provided global gridded sea level time series up to 10-15 km to the coast only, preventing estimation of sea level changes very close to the coast. In the context of the ESA Climate Change Initiative coastal sea level project, we have developed a complete reprocessing of high-resolution (20 Hz) Jason-1, 2 and 3 altimetry data along the world coastal zones using the ALES (Adaptative Leading Edge Subwaveform) retracker combined with the XTRACK system dedicated to improve geophysical corrections at the coast. Here we present coastal sea level trends over the period 2002-2020 along the whole African continent. Different coastal sea level trend behaviors are observed over the study period. We compare the computed coastal trends in Africa with results we previously obtained in other regions (Mediterranean Sea, Northeastern Europe, north Indian Sea, southeast Asia and Australia).