

Consequences of sea level variability and sea level rise for Cuban territory

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Abstract The objective of the present paper was to determine a first approximation of coastal zone flooding by 2100, taking into account the more persistent processes of sea level variability and non-accelerated linear sea level rise estimation to assess the main impacts. The annual linear rate of mean sea level rise in the Cuban archipelago, obtained from the longest tide gauge records, has fluctuated between 0.005 cm/year at Casilda and 0.214 cm/year at Siboney. The main sea level rise effects for the Cuban coastal zone due to climate change and global warming are shown. Monthly and annual mean sea level anomalies, some of which are similar to or higher than the mean sea level rise estimated for halfway through the present century, reinforce the inland seawater penetration due to the semi-daily high tide. The combination of these different events will result in the loss of goods and services, and require expensive investments for adaption.

Key words sea level rise; flooding; climate change; global warming; tides; climate change; tide gauge; global warming; coast; Cuba