

Coastal Land Change due to Tectonic Processes and Implications for Relative Sea-level Rise in the Samoan Islands

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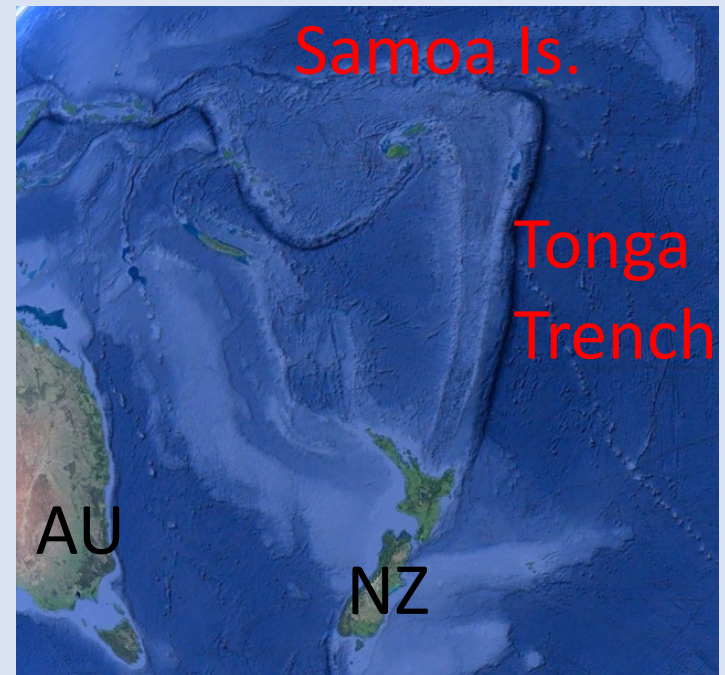
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22 Feb. 2019, Upolu Island, Samoa: Flooding



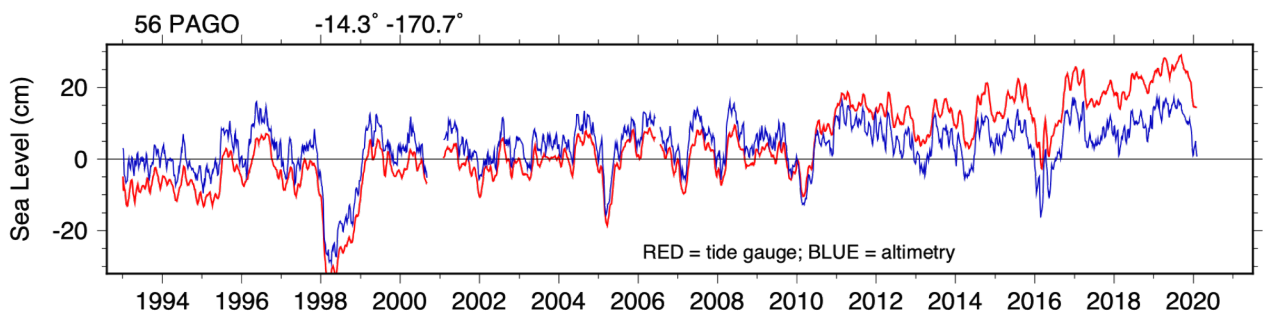
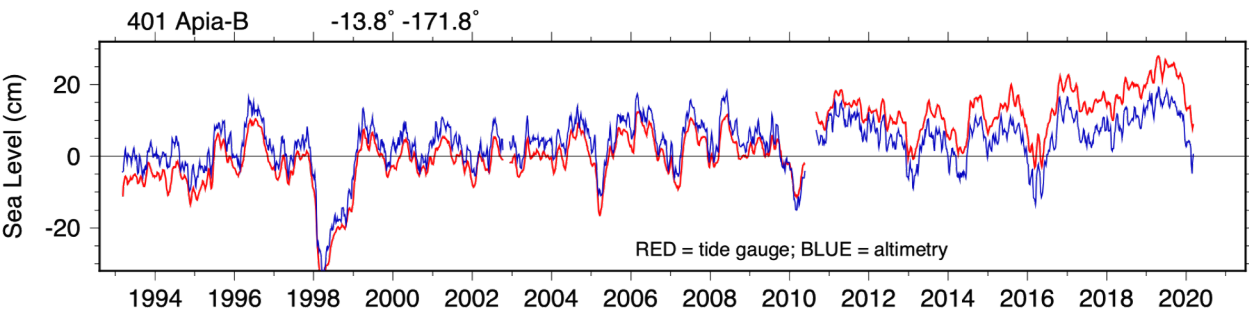
How much is the sea-level rising versus the land subsiding?



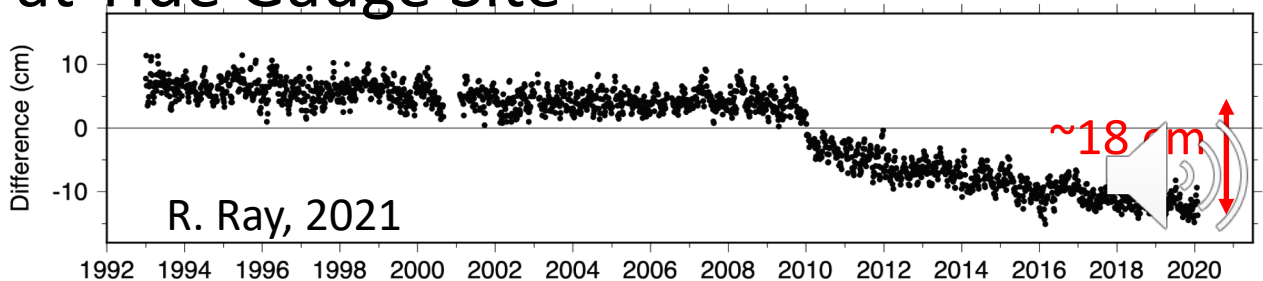
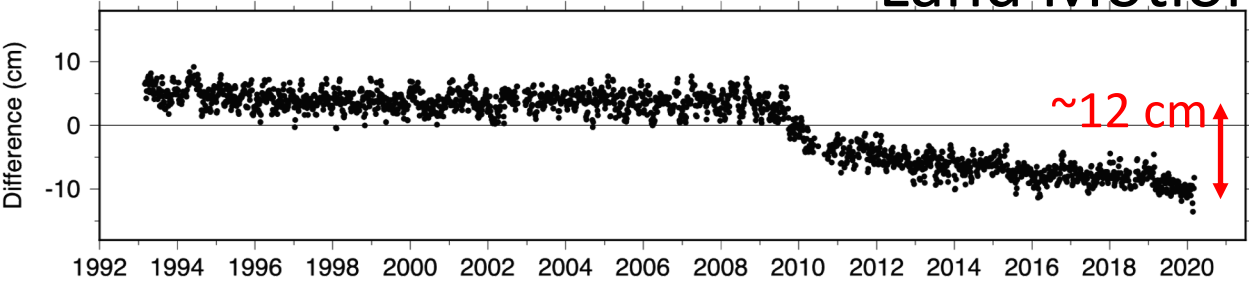
GPS



Tide
Gauge



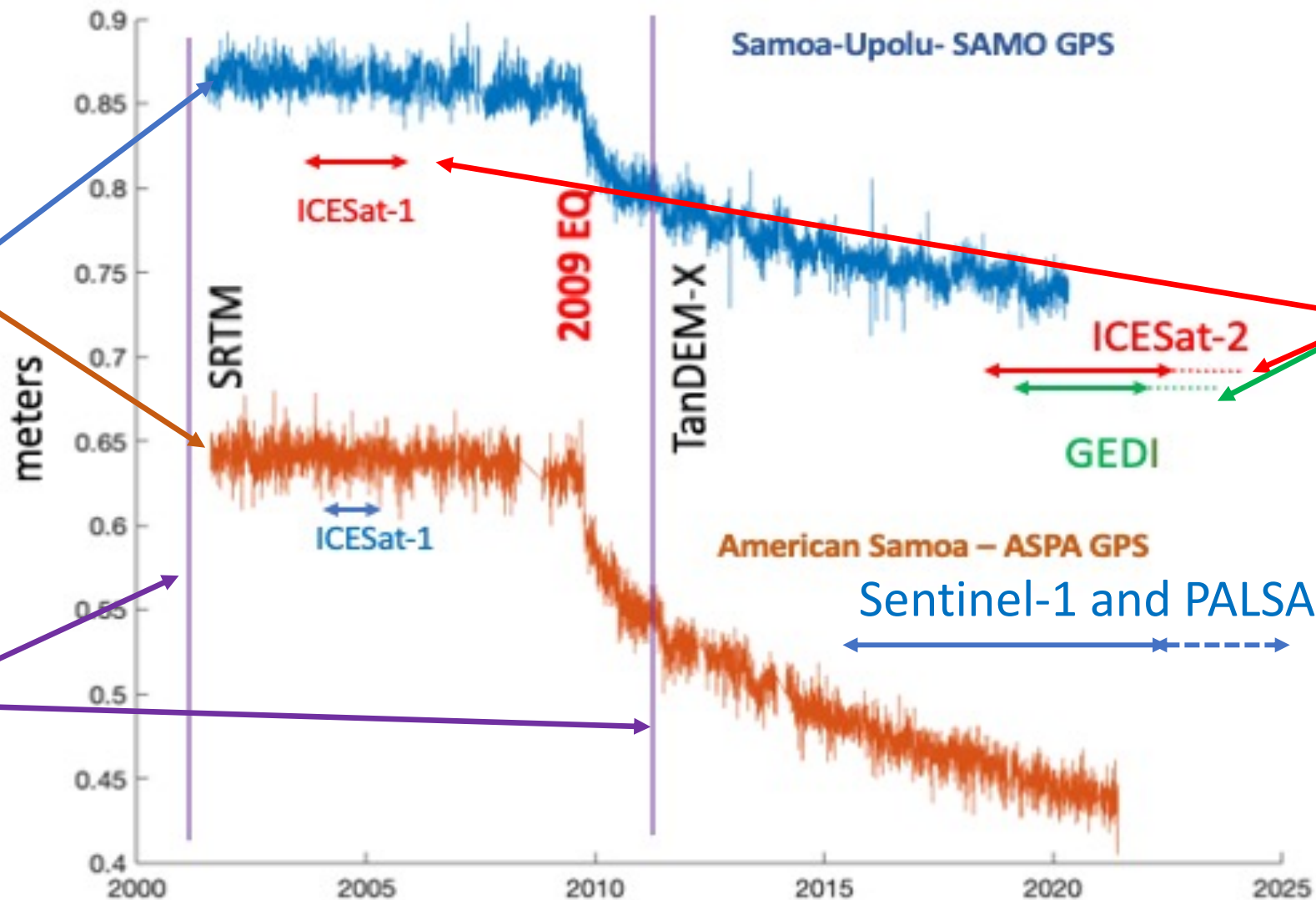
Land Motion at Tide Gauge Site



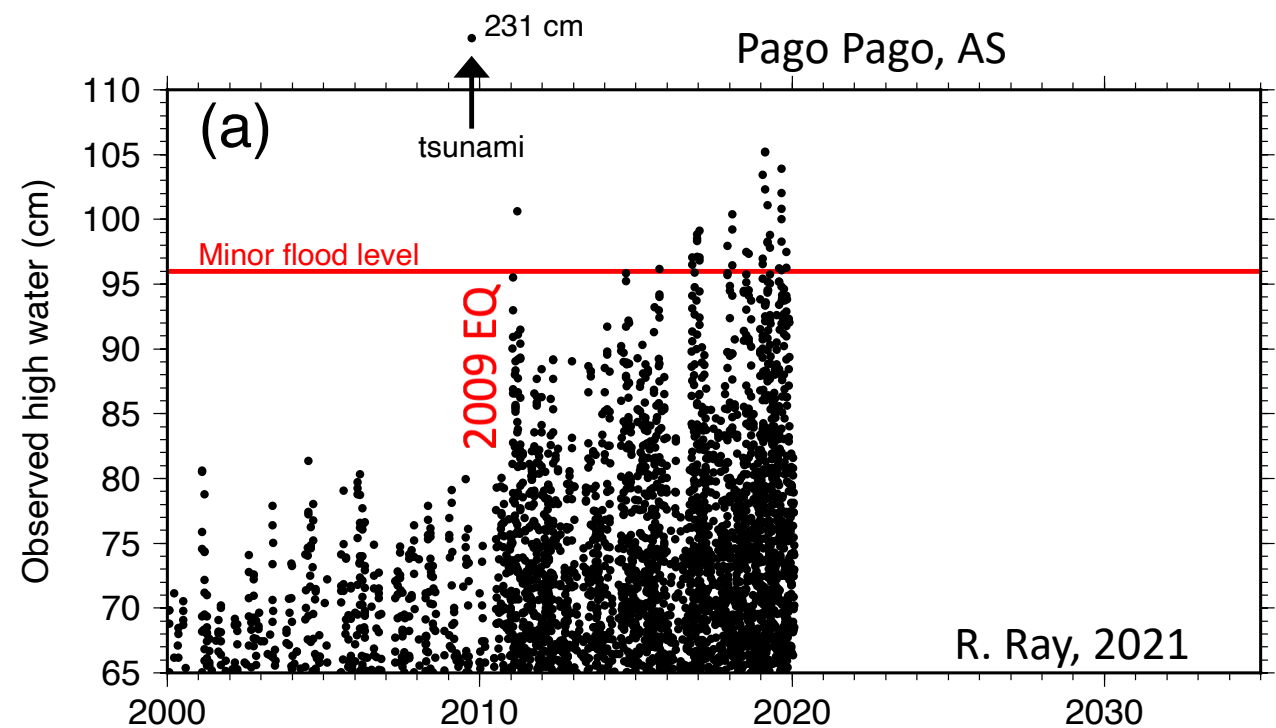
Constraining the **temporal** and **spatial** variability of land motion component of RSL

Continuous
GPS

Reference
Surface
(DEM)



Accounting for land motion has practical consequences:



Minor flooding level surpassed

Observed high water levels at Pago Pago harbor relative to mean sea level (1983-2001).

Questions?

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Sea Engineering, Inc.; FHWA, US ACE

Highway shore protection, Tutuila, AS