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## Observations of uplift and subsidence along the North American Pacific coast – illuminating the geodynamic complexity of an active margin

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The Pacific Coast of Central North America is a geodynamically complex region subject to various geophysical processes with different patterns of vertical land motion. It includes two distinct tectonic regimes: the Cascadia subduction zone and the strike-slip San Andreas fault system. The vertical land motion in this region reflects not only tectonic activity of these plate boundaries, but also isostatic signals associated with different loading effects such as the (de)glaciation of North American ice sheets and the more contemporary, anthropogenically-related groundwater extraction and mountain glacier mass loss. These processes occur over a broad range of timescales and are observed by a variety of measuring techniques.

Here we combine geological measurements of relative sea level (RSL) change with contemporary observations of vertical land motion inferred from geodetic data to decipher and thus better understand the contribution from various individual processes. Our results suggest that contemporary vertical land motion is dominated by Cascadia interseismic deformation and the isostatic response to the retreat of the North American ice sheets but is also influenced by other contemporary processes. We present some model results that illustrate the contributions of the above-mentioned processes to RSL projections along this coastline.