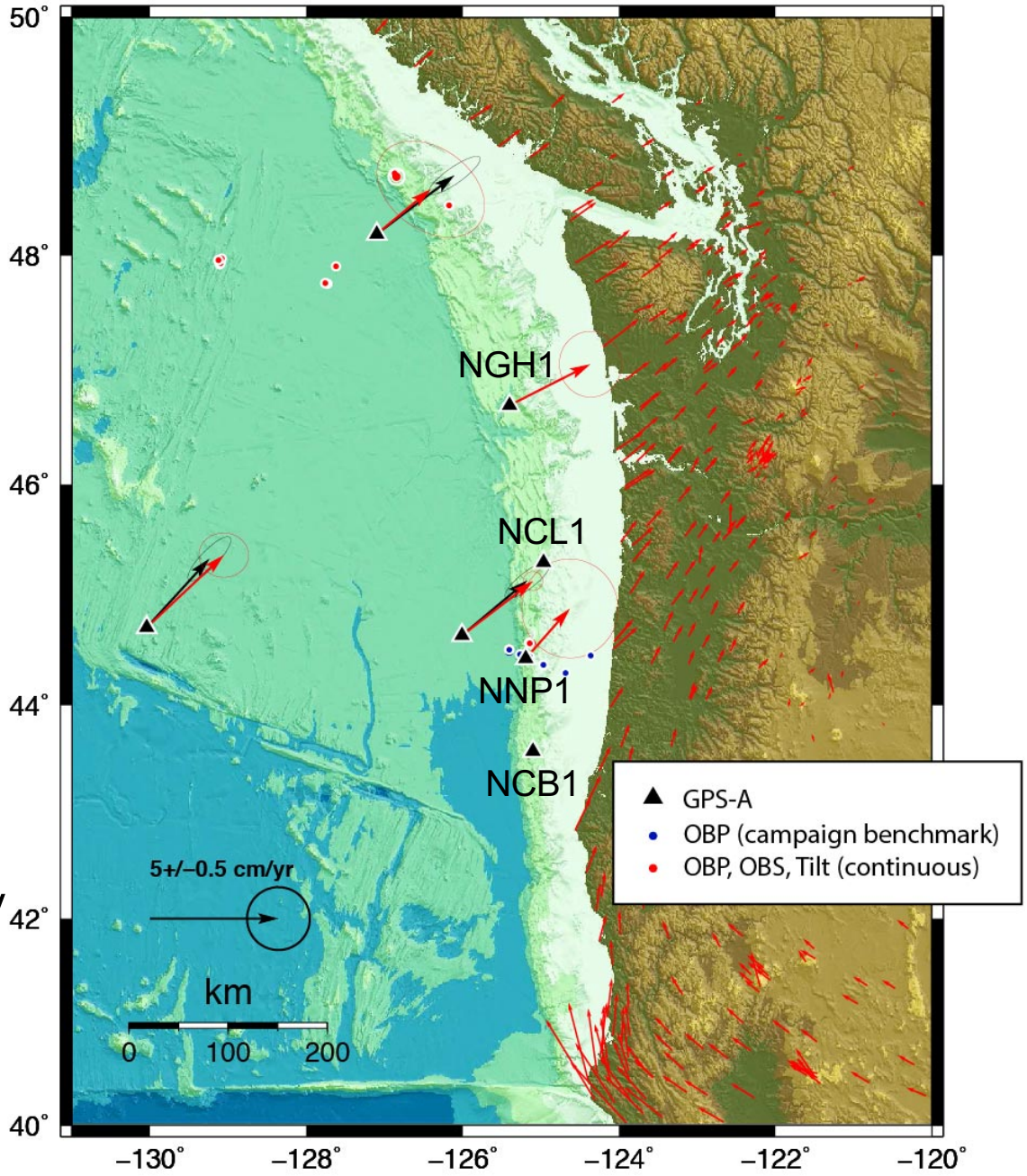
Assessing the State of Locking on the Frontal Thrust of the Cascadia Subduction Zone with Seafloor Geodesy

Funding Agency: NSF – MGG

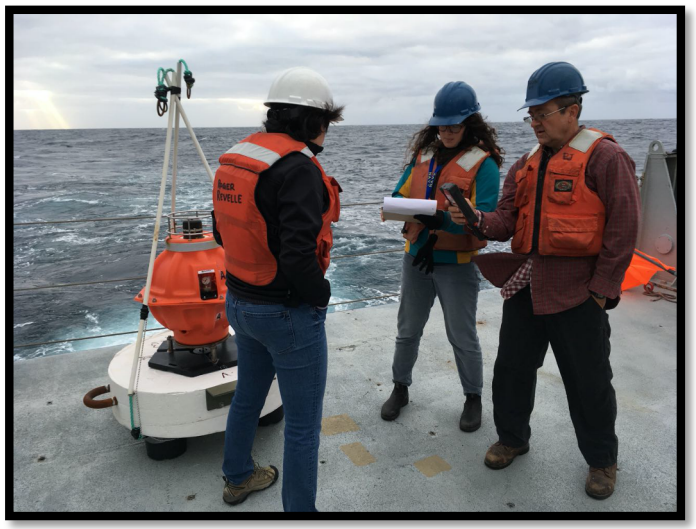
PIs: David Chadwell (UCSD)
David Schmidt (UW)

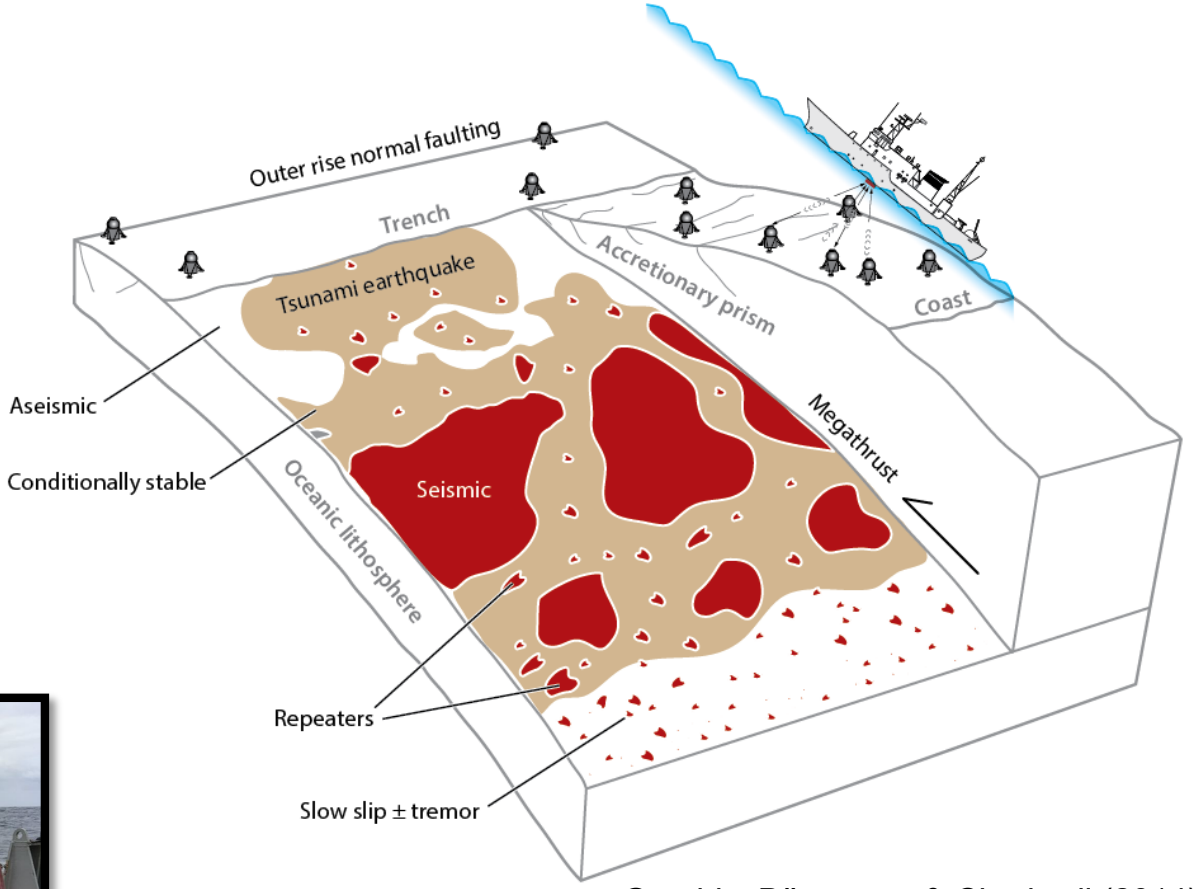
Primary Goal: Measure the deformation rates of the accretionary prism due to interseismic strain accumulation.



Motivating Scientific Questions

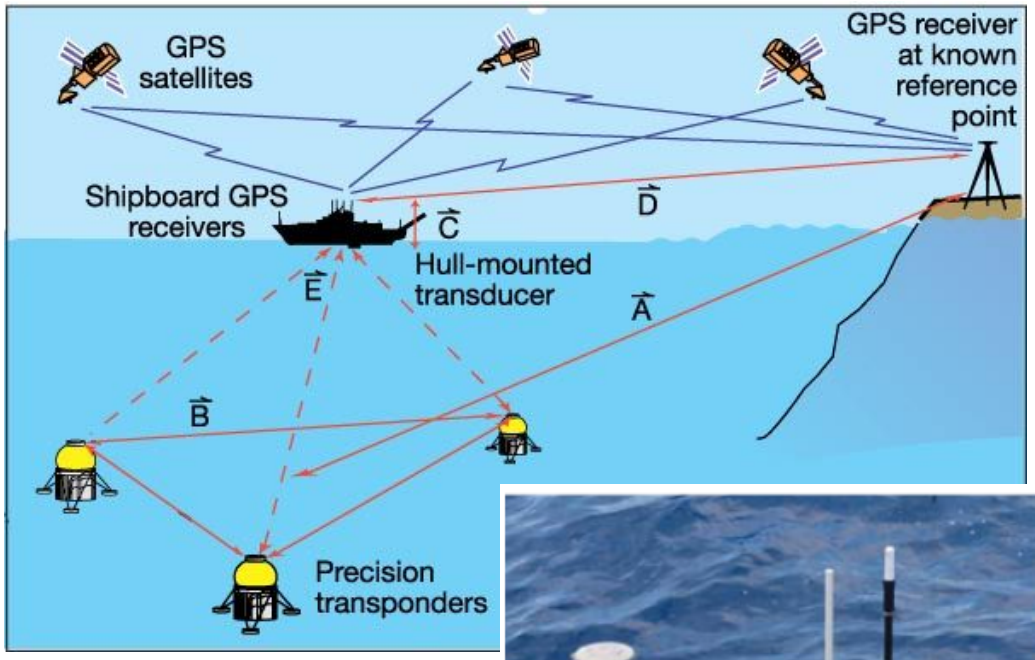
- What is the state of locking near the trench on the Cascadia subduction zone?
- What is the potential for tsunamigenesis in Cascadia?
- How does the state of locking vary along strike?



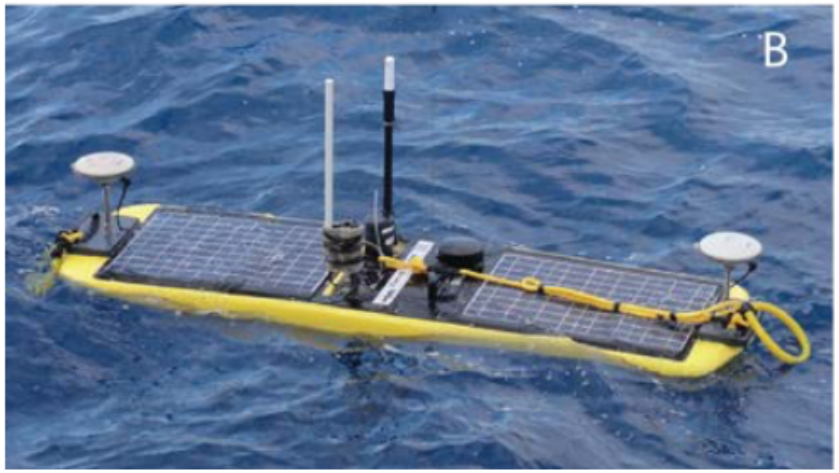


Graphic: Bürgmann & Chadwell (2014)

GNSS-Acoustic Operations

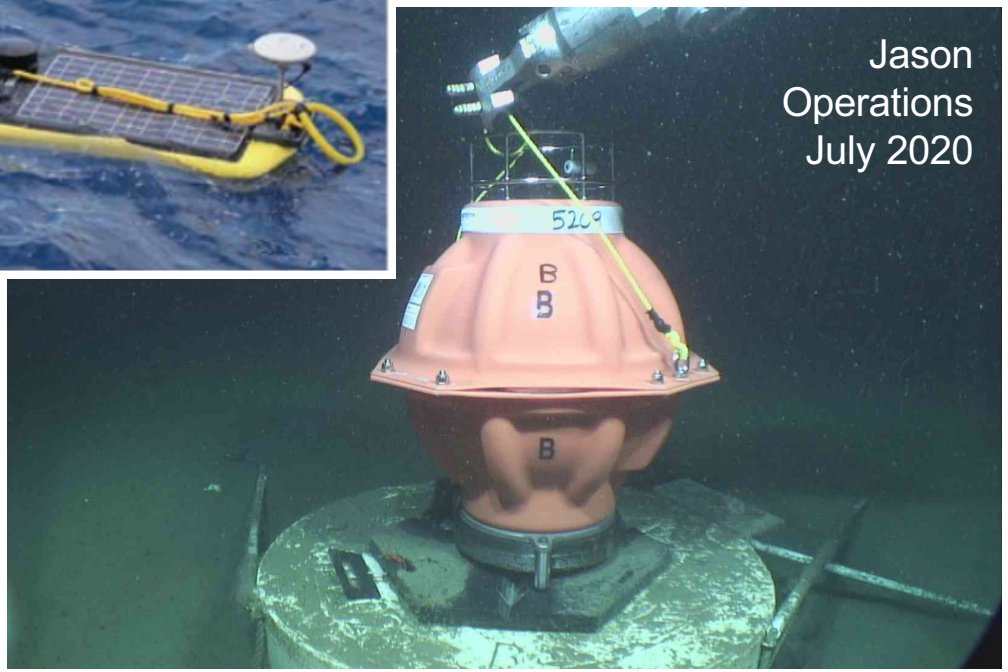


GNSS-A Components



Wave Glider

GNSS-A Transponder and Benchmark



2020 R/V Thompson Cruise:
Re-position new transponders on existing cement benchmarks at one site. This allows for long-term time series.