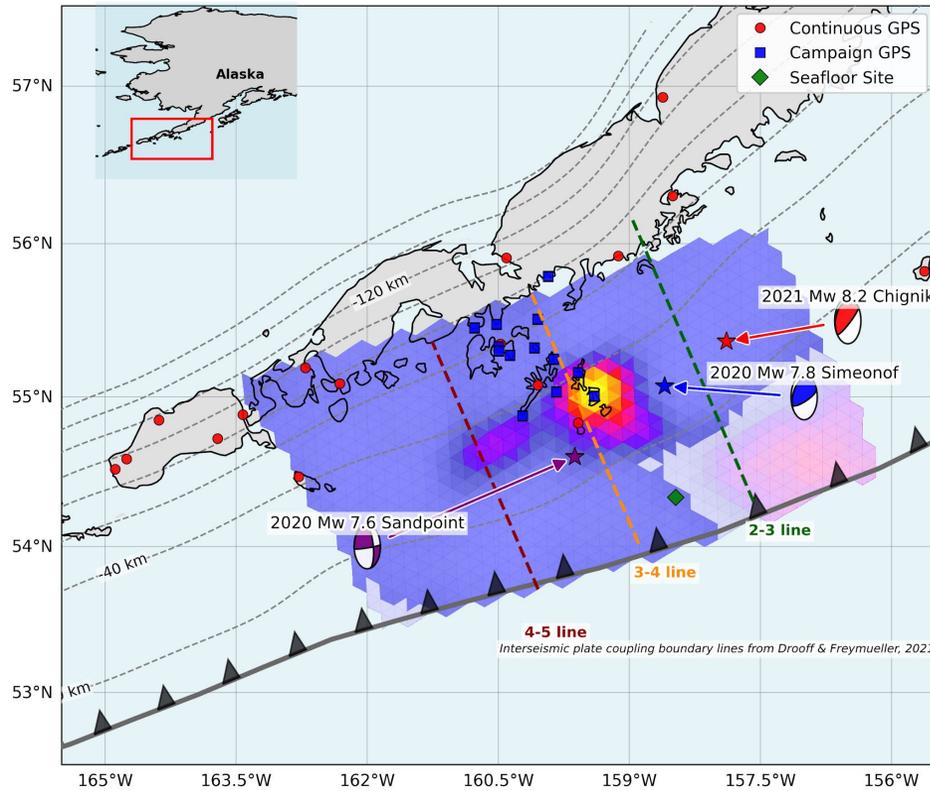
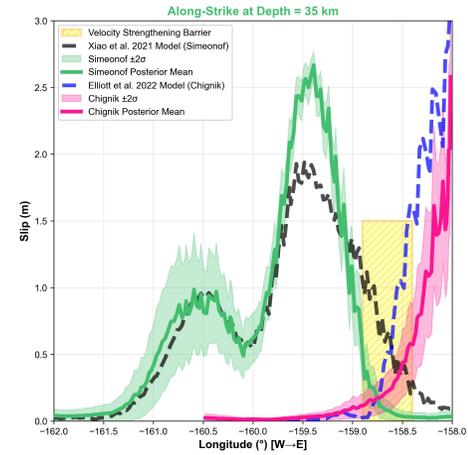
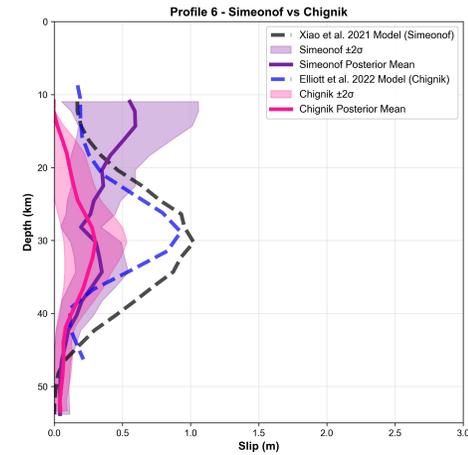
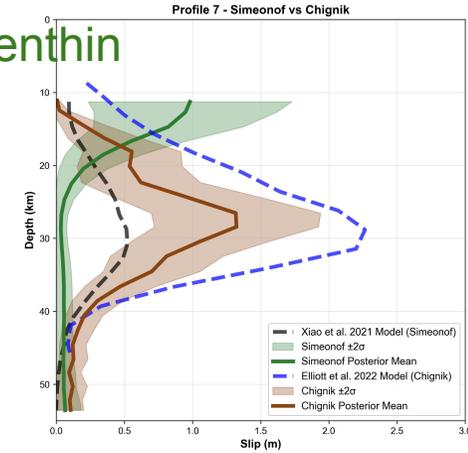
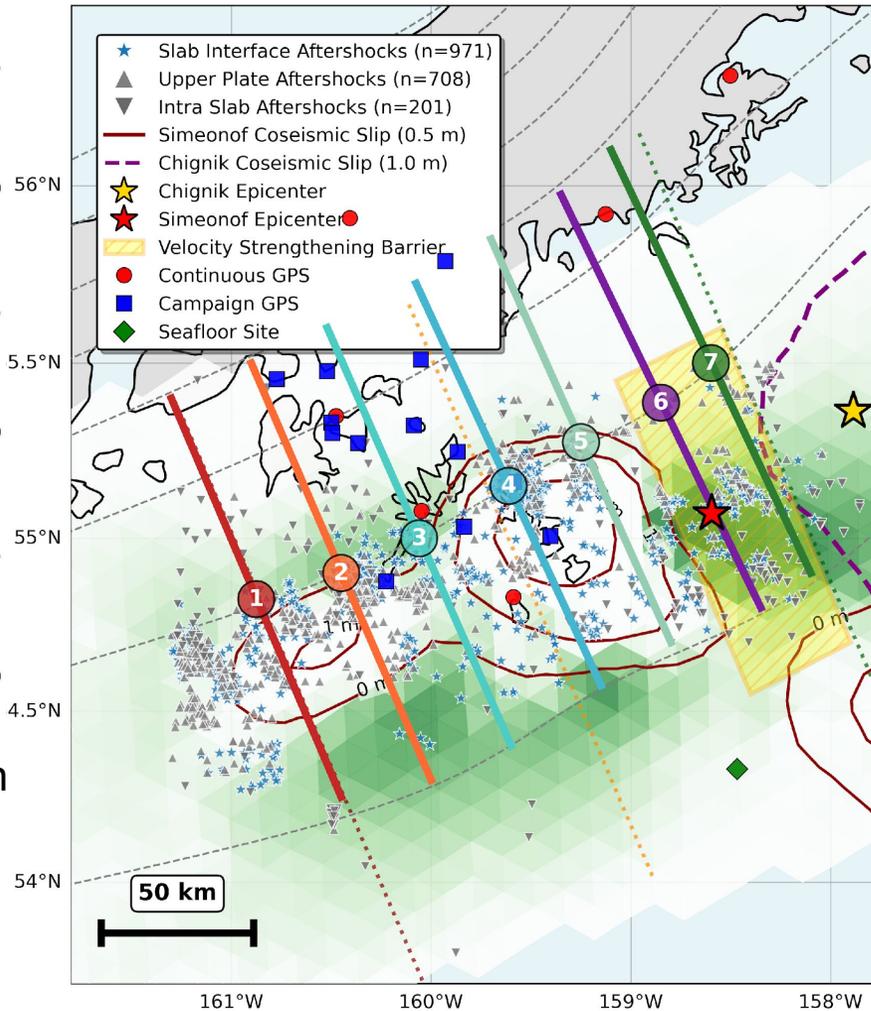


# Constraining Megathrust Earthquake Slip by Jointly Inverting for Slip and its Subsequent Afterslip

Zechao Zhuo, Jeffrey Freymueller, Junichi Fukuda, Zhuohui Xiao, Julie Elliott, Ronni Grapenthin



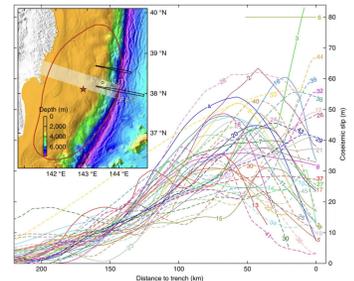
## Coseismic Slip, Afterslip, and Cross-Section Locations



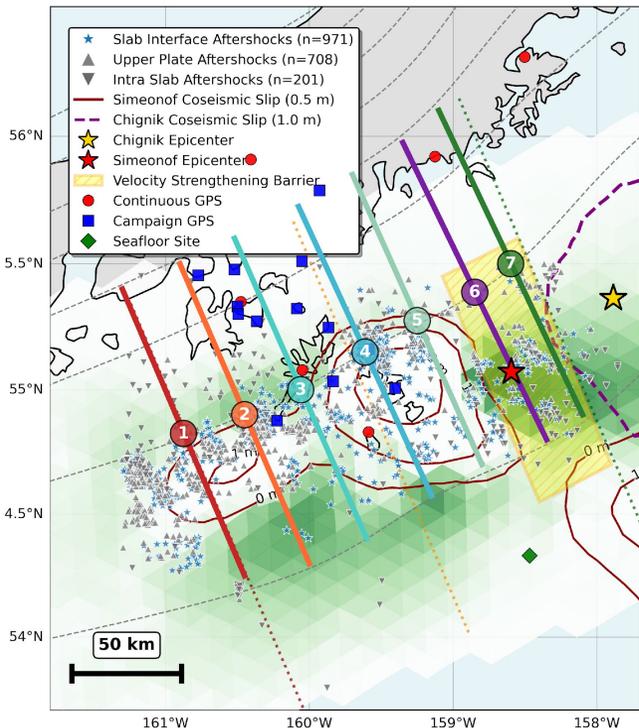
Q : Earthquake slip models are highly uncertain. How can we improve them?

Q: When slip models disagree, which should we trust for impact modeling—aftershocks, postseismic deformation?

A : We can flip this: use observations and physics of these processes to constrain the slip

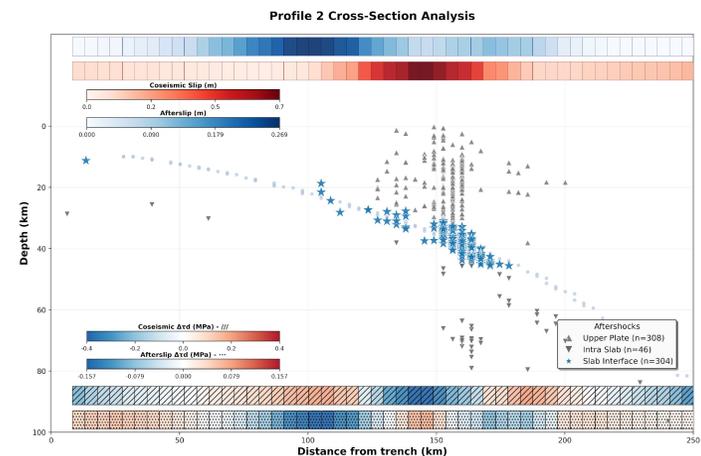
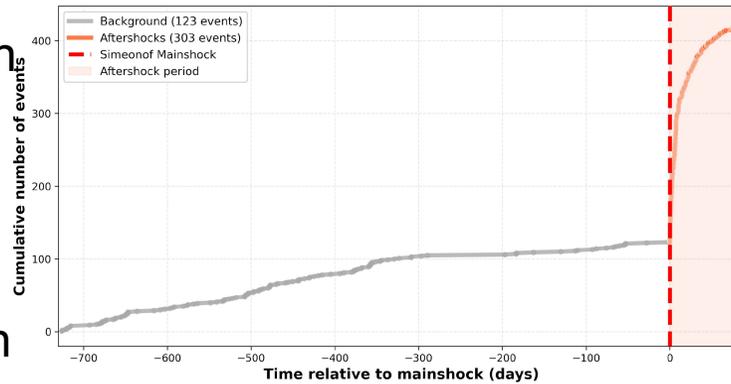


# Coseismic Slip, Afterslip, and Cross-Section Locations

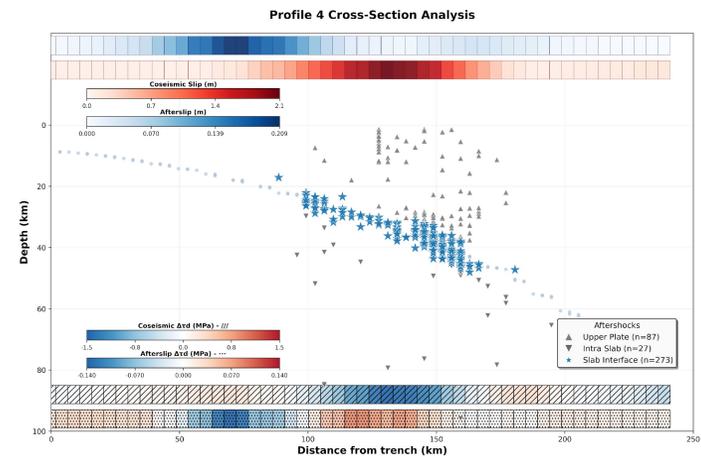
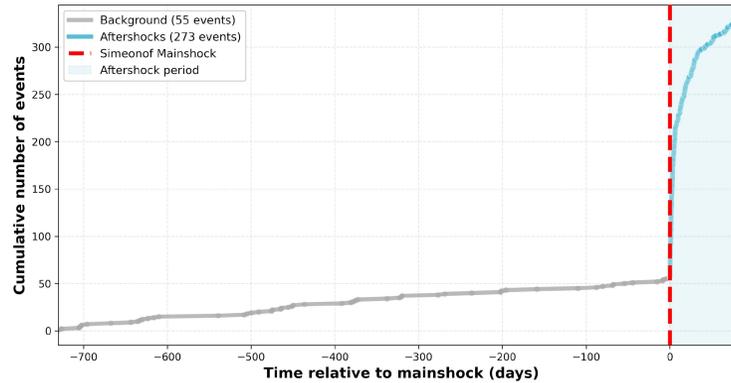


Higher resolution slip and afterslip models enable cross-disciplinary insights—aftershocks rocks spatiotemporal relationships, slab interface material heterogeneity.

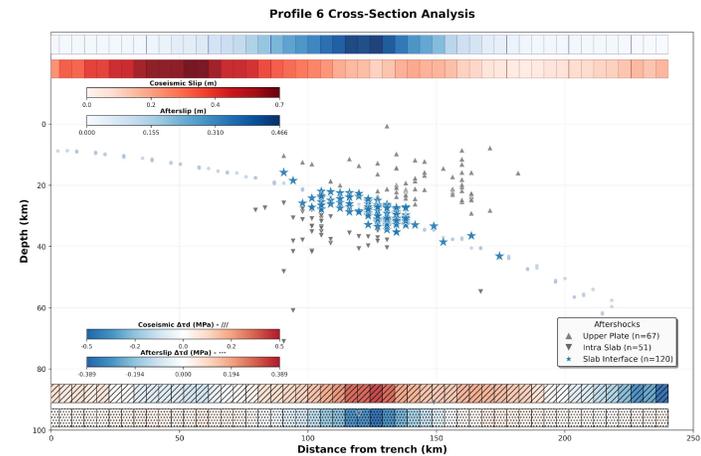
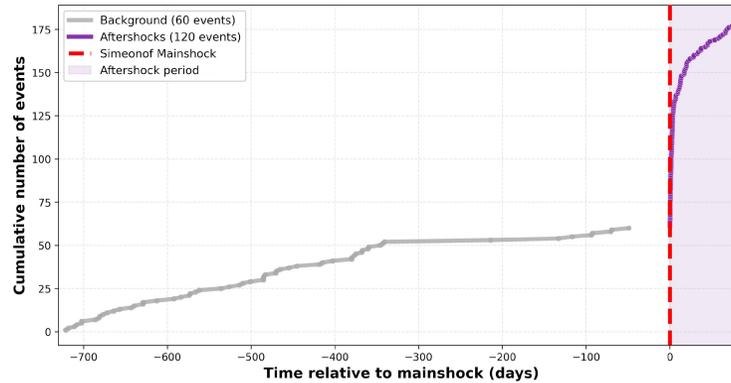
## Profile 2: Cumulative Seismicity Timeline



## Profile 4: Cumulative Seismicity Timeline



## Profile 6: Cumulative Seismicity Timeline



### Vp/Vs at Slab Interface

