

Article

Boundary-Included Enhanced Water Storage Changes Inferred by GPS in the Pacific Rim of the Western United States

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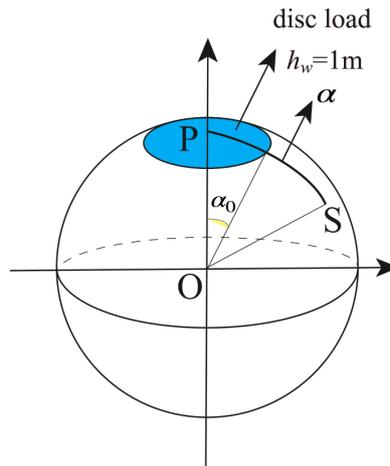


Figure S1. The sketch of disc load.

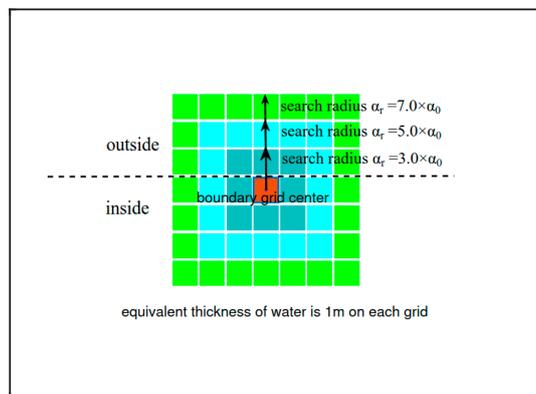


Figure S2. The sketch of using the search radius select outside grid.

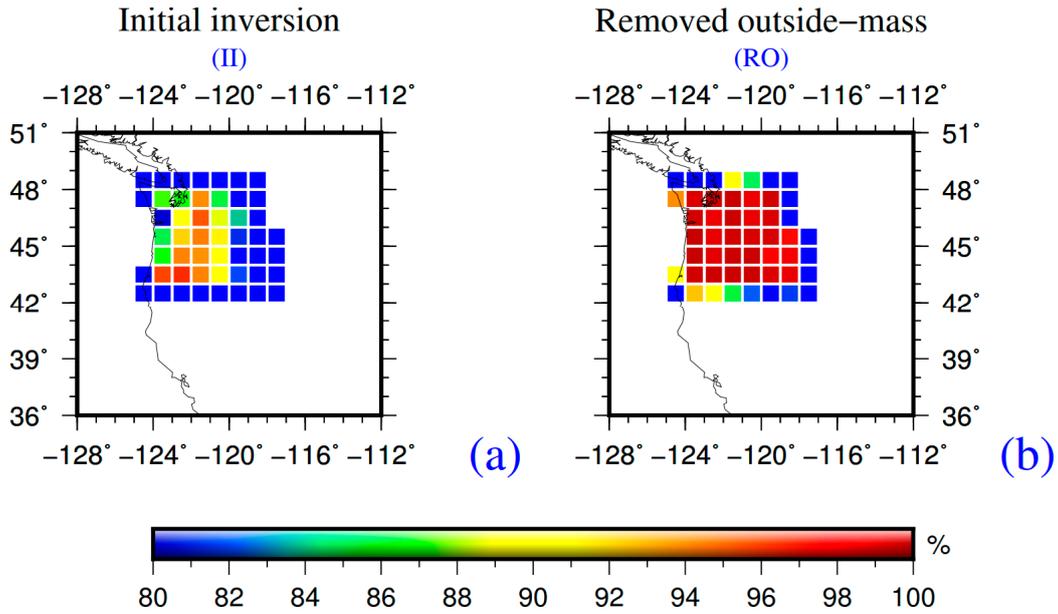


Figure S3. Direct inversion result of simulation vertical deformations (with uniform $0.25^\circ \times 0.25^\circ$ distribution) in Washington and Oregon (1° inversion spatial resolution). The outside mass effect is not removed in (a), while the outside mass is removed by GRACE Mascon data in (b).

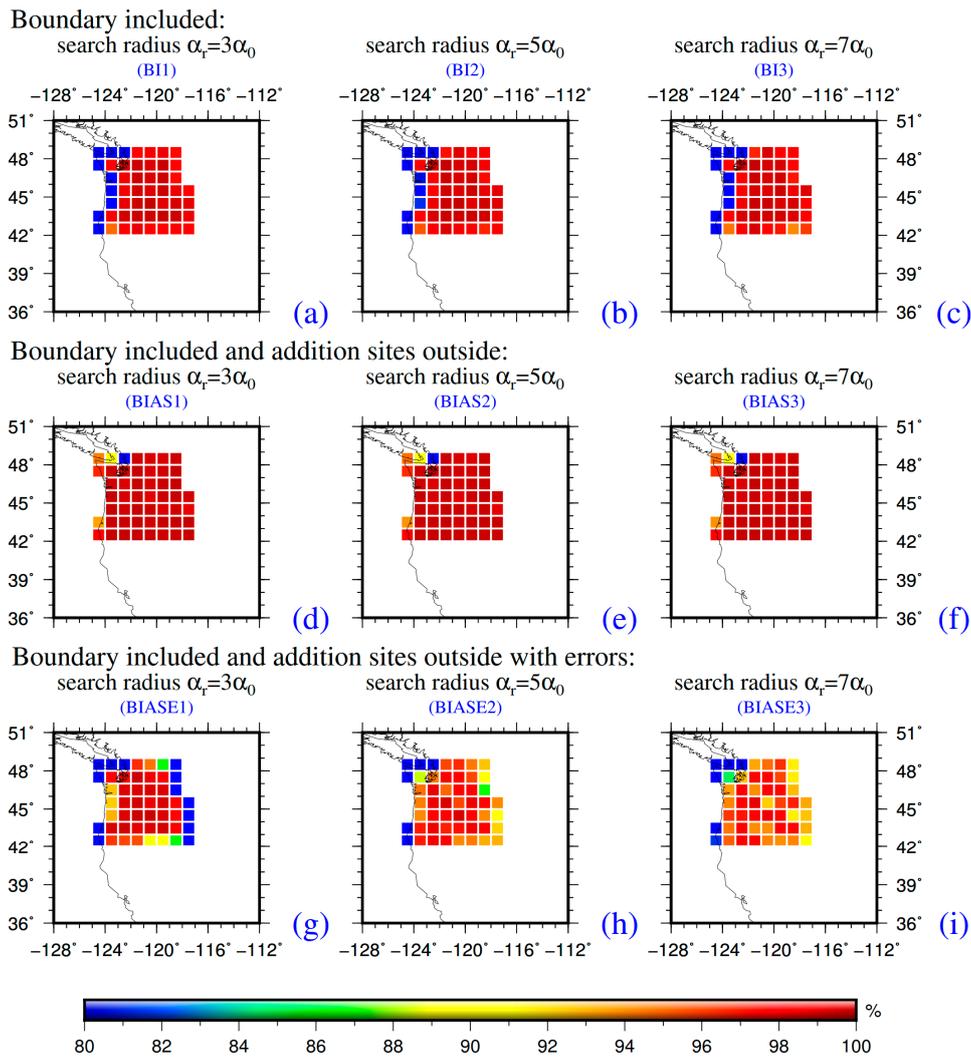


Figure S4. The inversion spatial resolution is 1° in Washington and Oregon. (a)–(c) is the inversion results of simulation tests T3 (the search radius is 0.75° , 1.25° and 1.75°); (d)–(f) is the inversion results

of simulation tests T4(the extend area is 0.75° , 1.25° and 1.75° and additional vertical deformations with no errors); (g)–(i) is the inversion results of simulation tests T5(the extend area is 0.75° , 1.25° and 1.75° and additional vertical deformations with 20% Amplitude Ratio GUASS white noise).

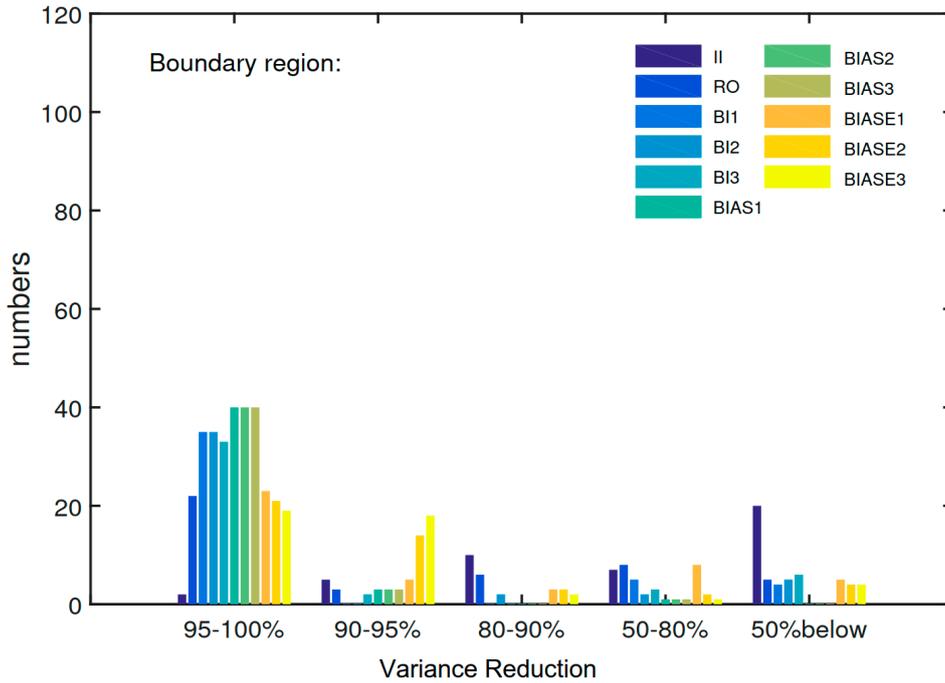


Figure S5. histogram by the variance reduction of the simulation inversion results (Figures S3 and S4) with true value in boundary region.

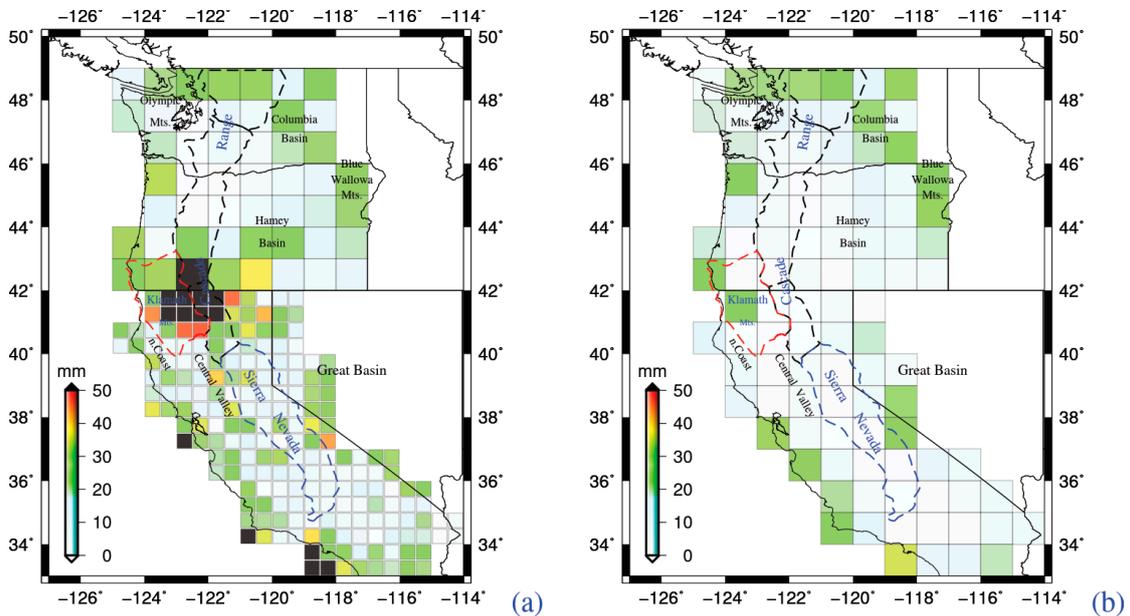


Figure S6. The standard deviations of the residuals between the boundary included results with the no boundary included results. the inversion spatial resolution is 1° north of the latitude 42°N line and the inversion spatial resolution is 0.5° south of the latitude 42°N line in (a); the inversion spatial resolution of the whole region is 1° in (b).