

Glacier Ice Mass Fluctuations and Fault Instability in Tectonically Active Southern Alaska



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Reviews

It is just one of my personal favorite books. I was able to comprehend every little thing out of this published publication. It is extremely difficult to leave it before concluding, once you begin to read the book.

(Isaac Olson)

GLACIER ICE MASS FLUCTUATIONS AND FAULT INSTABILITY IN TECTONICALLY ACTIVE SOUTHERN ALASKA



BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 48 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Across southern Alaska the northwest directed subduction of the Pacific plate is accompanied by accretion of the Yakutat terrane to continental Alaska. This has led to high tectonic strain rates and dramatic topographic relief of more than 5000 meters within 15 km of the Gulf of Alaska coast. The glaciers of this area are extensive and include large glaciers undergoing wastage (glacier retreat and thinning) and surges. The large glacier ice mass changes perturb the tectonic rate of deformation at a variety of temporal and spatial scales. We estimated surface displacements and stresses associated with ice mass fluctuations and tectonic loading by examining GPS geodetic observations and numerical model predictions. Although the glacial fluctuations perturb the tectonic stress field, especially at shallow depths, the largest contribution to ongoing crustal deformation is horizontal tectonic strain due to plate convergence. Tectonic forces are thus the primary force responsible for major earthquakes. However, for geodetic sites located 10-20 km from major ice mass fluctuations, the changes of the solid Earth due to ice loading and unloading are an important aspect of interpreting geodetic results. The ice changes associated with Bering Glacier's most recent surge cycle are large enough to cause discernible surface displacements. Additionally, ice mass fluctuations associated with the surge cycle can modify the short-term seismicity rates in a local region. For the thrust faulting environment of the study region a large decrease in ice load may cause an increase in seismic rate in a region close to failure whereas ice loading may inhibit thrust faulting. This item ships from La Vergne, TN. Paperback.



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