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Using Gravitational and Magnetic Data to Understand Interactions Between Active Seismic Zones Within the Interior of Alaska

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Using Gravitational and Magnetic Data to Understand Interactions Between Active Seismic Zones Within the Interior of Alaska

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Differences in rock density, along with changes in the orientation of the magnetic field, provide vital information about the tectonic environment within the interior of Alaska in a region where outcrop exposure is poor due to recent glacial and fluvial activity. Analysis of the gravity and magnetic field can help identify relationships between recent (1989-2008) and historic (pre-1971) seismicity and suspected strike-slip, reverse, and thrust faults within the region, as differences in density and magnetic properties of materials may be observed across fault zones. Our overall objective is to better understand the complicated interactions between the strike-slip Denali fault system and surrounding faults, especially how the 2002 M=7.9 Denali fault earthquake may have brought surrounding faults closer to failure.