

Myanmar Earthquake Mw 7.7 on 28 March 2025: geodynamic and spaceborne DInSAR perspectives

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On 28 March 2025, a devastating earthquake (Mw 7.7) ruptured the central segment of the Sagaing Fault, a major right-lateral strike-slip fault that accommodates the northward motion of the Myanmar Microplate relative to the Sunda Plate. Historical records, GPS measurements, and past seismic activity had already identified this fault segment as a seismic gap which has been accumulating strain since the 1839 great earthquake (M~8.3). The recent earthquake in 2025 produced an exceptionally long rupture, widespread surface displacements and ground shaking, causing significant casualties and destruction across Myanmar and neighbouring regions. The present study employs spaceborne interferometric synthetic aperture radar (InSAR) analysis to map land surface displacements and rupture geometry associated with the event.

Keywords: DInSAR, geodynamic perspectives, Myanmar Earthquake 2025, Sagaing Fault, super shear