

The value and role of GNSS in earthquake and tsunami early warning

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The value of GPS in hazards warnings was quickly recognized following the 2004 M9.1 Sumatra earthquake. Since then numerous efforts have arisen to incorporate real time GNSS into both earthquake and tsunami early warning. Here we will synthesize the knowledge gained since then and summarize what the value of GNSS is in regards to both earthquake and tsunami warning. Drawing on examples from the operational system in the western US we will argue that GNSS must be, alongside traditional seismic deployments, a key component of any capable warning system. We will also discuss techniques for routine testing of such systems with synthetic earthquakes and simulated GNSS data.

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