Stress Drops and Radiated Energies for Southern California earthquakes

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We used empirical Green function deconvolutions to obtain source time functions for 49 of the larger (M 3 4.0) aftershocks of the 1994 Northridge, California earthquake.Combining the Northridge results with data from other southern California earthquakes, we see a clear increase in the amount of relative radiated energy as a function of earthquake moment. The results also show that there is not an increase in the static stress drop over the same moment range. This systematic change in earthquake scaling between small and large earthquakes suggests differences in rupture properties that may be attributed to differences of dynamic friction on the fault.