

To detect a critical state of the critical strain state: an example of geodetic data in the Tokai District, central Japan.

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When will the next Tokai earthquake occur? Geodetic data may provide a hint for the answer. I found a curious oscillating behavior in secular variations of relative ground level in the Tokai district. The period of the oscillation is becoming shorter acceleratedly with time, which thereby predicts the existence of a critical point in near future. The data variations can successfully be expressed by the general equation describing the near-critical-point behavior based on the discrete scale invariance theory. The critical point may be interpreted as the occurrence of the maximum-sized fracture, i.e., the biggest earthquake in a given tectonic environment. The time predicted is 2004.3(error=0.8) year