



Nonvolcanic tremors in Costa Rica

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Using a network of seismic borehole stations we have discovered nonvolcanic tremors near the downdip limit of the seismogenic zone of the subduction zone beneath Nicoya Peninsula in North Costa Rica. Until now nonvolcanic tremors were observed in subduction zones in Japan, Cascadia and Mexico, but also at transform faults like the San Andreas fault. Those subduction zones have a hot subduction setting which is assumed to be essential for the generation of nonvolcanic tremors. The tremor occurrence in the Costa Rican subduction zone with its rather cool setting suggests that tremors are probably more widespread than existing hypotheses of their generation suggest.

Within the first year of operation we observed 2 phases of increased activity: in autumn 2007 and in summer 2008. A burst of nonvolcanic tremors in May 2008 coincided with a slow slip event observed by GPS measurements (Psencik et al., 2007).