Stress in earthquake developing region observed via energy index; Semi-controlled experiment in a gold mine in South Africa (27)

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Recently, seriously huge earthquakes frequently took place, and it is pressingly required to predict them. Stress decrease in an earthquake nucleation region must precede the earthquake. In South African gold mines, stress parameters estimated with seismograms have been monitored to utilize the event prediction. It is suggested that one of them, energy index (EI), is also available to the prediction of natural earthquakes. Stress drop and apparent stress are also stress parameters estimated with seismograms. Stress drop is unsuitable for monitoring the small change, and apparent stress depends on the magnitude of events for small events. EI is the best parameter for monitoring stress state in these three because of its simple estimation and its independence from the magnitude of events.