A geodetic sign of the critical point of stress-strain state in the Tokai district

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A power low distribution of earthquake sizes is a signature of scale invariance, leading to the critical point analogy. We analyzed the ground level data between Kakegawa and Omaezaki, central Japan. Oscillation of the data can be roughly explained with the following log-periodic model,

$$f(t) = A + B \, (t_c - t)^{m'} [\, 1 + C \cos\{ \, w \log(t_c - t) + p \, \} \,] + Dt \, ,$$

where t_c is the critical point. The critical point of the model is regarded as occurrence of the largest earthquake in the Tokai ditrict. In this research, we analyze other ground level data in the Tokai district to investigate whether the oscillations appear widely in the area.