

## Examination of statistical significance of earthquake-related precursory phenomena -Izu Islands Koju case, as an example

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We published the paper entitled "Preseismic anomalous telluric current signals observed in Koju-shima Island, Japan, Proceedings of National Academy of Sciences of the United States of America (PNAS), Vol. 109, no. 47, 19125-19128, doi: 10.1073/pnas.1215669109, 2012, by Yoshiaki Orihara, Masashi Kamogawa, Toshiyasu Nagao and Seiya Uyeda". The authors believe that this paper is the first example of the proof of the existence of precursory electric signals by using the well-considered statistical approach in the ground observation. For the next step, to persuade suspicious general scientists, we have to present the effectiveness of this kind of precursory phenomena. Because some seismologists claim that the ETAS model performs very good prediction in comparison with random prediction with probability gain of 100. The most important issue is to introduce the concept of "probability gain". Actually, this argument is somehow nonessential. However we have to overcome this kind of argument. In the presentation, we would like to propose the minimum step of necessary statistical evaluation items.

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