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## **Extremely Big Avalanches in Sand-pile**

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From the very appearing Bak et al's sand-pile has been treated as a possible model for earthquakes. The artificial and real processes exhibit a power distribution of events (avalanches in model and earthquakes in seismicity) in the significant range of their sizes.

We have found that the distribution density of extremely big avalanches decreases with their size s as  $(c_1 - c_2 \log s)/s$ , where  $c_1$  and  $c_2$  are appropriate positive constants depending on the lattice size and the length of the model catalogue.

The biggest avalanches admit a certain predictability in advance. Our algorithm develops the hypothesis that usually the particles are organized in clusters while the total amount of the particles goes up before the big avalanches. These precursors can be interpreted in geophysical terms as the consolidation degree of the area generating forthcoming earthquake and the stress accumulation.

The bigger avalanches are to be predicted the better the quality of the prediction becomes. This the case for earthquake prediction, where the best results are obtained for the biggest earthquakes having magnitude 8.0 and above.