Spring-Slider Laboratory Model as Teaching Apparatus in College-Level Introductory Earth Science Course

Mamoru Kato[1]

[1] IHS, Kyoto Univ.

   We have developed analogue laboratory apparatus of spring-slider experiments as a teaching module in introductory earth science course in college level.

   Such model, first proposed by Burridge and Knopoff [1967], is known as a toy model to explain properties of natural seismicity, notable of which is Gutemberg-Richter formula in number-magnitude relationship.

   Most of recent researches in this area are with computer-based approaches.   Our model is, however, an analogue model which is suited to visually recognize how the system behaves in real-time manner.

   Number-magnitude relationship similar to the well known Gutemberg-Richter's law is observed with our analogue model. Additionally, periodetic large events are observed in some cases.

   Our analogue model provides a good opportunity to learn seismicity and prediction of large earthquakes, and is a useful tool to learn the property of complex system in earth science.