

## Development of a laser-interferometric broadband seismometer for observation at extreme environments

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Broadband seismic observation is considered to be necessary for clarifying interior structure of planets such as moon and mars. For seismic reseach in deep boreholes on earth, the broadband observation is indispensable for studies on seismic region around plate boundaries as well as structure of center of the earth. Thus, broadband seismometers which can be installed in extreme environments, such as high temperature, high pressure, and installation shocks, would be a useful tool for seismology.

Araya has been developing a laser-interferometric broadband seismometer, and has shown high performance of laser interferometry, such as low intrinsic noise and self calibration. However, mechanical stability for external shocks should be tested to be applied for extreme environments. Therefore, we examined several possible mechanical strucure of pendulums using a shaking table with waveforms of launching. Details of the result and strategies of the development will be shown in the presentation.