

## Development of simple and handy seismometer (SPOT seismometer)

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We developed a simple and handy seismometer (SPOT seismometer; Sensor Pod of Train system). A SPOT seismometer mainly consists of a measurement part, a communication processing part, a mobile communication device and a GPS module. It's very compact and lightweight, so as to carry and install it easily. By installing them between permanent stations along rails, we can obtain spatial distribution of ground motions more densely, and use these information for train operation control after earthquakes. It works continuously about more than one month by four D size batteries. The measurement part is equipped with a MEMS accelerometer having the ability to measure seismic shakings correctly in the case of seismic intensity 3 and larger. A SPOT has functions of calculating instrumental seismic intensity and JRPGA (PGA passed 5Hz high cut filter), transmitting calculated seismic parameters and waveform data to a Web server via mobile telephone network when a seismic shaking exceeds a pre-defined threshold. The transmitted information is able to be viewed on website. Simultaneous observation of natural earthquakes by the SPOT seismometer and a seismic intensity meter is carried out and a proper operation of the SPOT is confirmed. In the next step, we plan to verify reliability by continuous operation in the actual environment of railways, and to spread the SPOT seismometer.

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