

## THE RANGE OF SEISMOMETERS WITH CAPACITIVE TRANSDUCER

I.P. Bashilov<sup>1</sup>, S.G. Volosov<sup>1,2</sup>, S.A. Korolev<sup>2</sup>, V.A. Merkulov<sup>3</sup>,  
V.M. Ovchinnikov<sup>2</sup>

<sup>1</sup>*Schmidt Institute of Physics of the Earth, Russian Academy of Sciences, Moscow, Russia*

<sup>2</sup>*Institute of Geosphere Dynamics, Russian Academy of Sciences, Moscow, Russia*

<sup>3</sup>*Federal State Unitary Enterprise Production Association "Oktyabr", Kamensk-Uralsky, Russia*

**Abstract.** The range of seismometers with the capacitor transducer converting the relative displacement between the inertial mass and the base of the device into an electric signal demonstrates high sensitivity and a unified electronic scheme, simplicity of production, adjustment and calibration. That is why these instruments are promising for mass production. To assess the possibility of using these seismometers as substitutes for imported counterparts comparative researches of a short-period portable digital seismometer and the broadband CM-3E sensor with the corresponding import equipment were conducted. The statistical analysis of seismic signals in the time and frequency domains was carried out.

**Keywords:** broadband seismometer, capacitor transducer, amplitude-frequency response characteristic, sensitivity of the seismic channel, power spectral density.