

Differential calibration of seismometers for measurement of rotation and strain

Jan WISZNIOWSKI, Marian HOŚCİŁOWICZ, Andrzej SKRZYŃSKI,
Jerzy SUCHCICKI, and Krzysztof P. TEISSEYRE

Institute of Geophysics, Polish Academy of Sciences, Warszawa, Poland
e-mail: jwisz@igf.edu.pl

A b s t r a c t

A method of correcting the seismometers' responses discrepancy for differential measurements of strains and rotations in the seismic far field is proposed. The method concerns differential calibration of the whole seismometers' array by electric current. A model of corrective filtering of the obtained differential signals in the Z domain is given. Two methods of the filter parameters' estimation are introduced; they are based on the seismometers response to the calibration.

A practical test of the methods – an analysis of a recorded seismic event – is added. Significant reduction of differences between simultaneous seismic recordings was obtained, which is interpreted as cleaning of differential signal from spurious elements.

Key words: seismometer, rotation seismograph, rotation wave, calibration of seismometers.