

**ANALYSIS OF SEISMIC ROTATIONS DETECTED  
BY TWO ANTIPARALLEL SEISMOMETERS:  
SPLINE FUNCTION APPROXIMATION OF ROTATION  
AND DISPLACEMENT VELOCITIES**

Lech SOLARZ, Zbigniew KRAJEWSKI and Leszek R. JAROSZEWICZ

Institute of Applied Physics, Military University of Technology  
ul. Kaliskiego 2, 00-908 Warszawa, Poland  
e-mail: jarosz@wat.edu.pl

**A b s t r a c t**

The paper presents an attempt to improve the reliability of seismic rotation measurements. The rotation caused by seismic events is measured by a system of two antiparallel pendulum seismometers (TAPS). Theoretical analysis of TAPS system is presented taking into account the fact that seismometers are not identical. The improvement is attained due to modelling of electro-mechanical phenomena in the seismometers and smoothing by spline approximation method.

**Key words:** seismic rotation, antiparallel seismometer, spline function.