



"Gheorghe Asachi" Technical University of Iasi, Romania



DIGITAL, AUTOMATED AND OPTICAL FIBER SYSTEMS USED IN DISPLACEMENT MEASUREMENTS OF LANDSLIDES IN ROMANIA

**Mihaela Constantin^{1*}, Kazunori Fujisawa², Koji Ishida², Kei Higuchi³,
Marius Vlaicu¹, Marta-Cristina Jurchescu¹**

¹*Institute of Geography, Romanian Academy, Str. D. Racovita 12, 023993, Bucuresti 20, Romania*

²*Public Works Research Institute, Tsukuba, Japan, 1-6 Minamihara, Tsukuba, Ibaraki, 3058516, Japan*

³*Sakata Denki, 2-17-20 Yagisawa Nishi-Tokyo, Tokyo, 2020022, Japan*

Abstract

This paper presents monitoring results obtained using digital, automated and optical fiber extensometers for ground surface displacement measurements in two case-studies located in the Buzău Carpathians and Subcarpathians, Romania. The main objective of this research is to accurately estimate the landslide displacement rates in order to be able to predict the time of landslide reactivation. In the case of the Colți Church landslide (the Buzău Carpathians), correlations between displacement and precipitation are reported. In the case of the Măguricea landslide (the Buzău Subcarpathians), results obtained using a conventional extensometer (automated type) are compared with those obtained using an optical fiber system. Differences of 0.1-1mm/day were noted between displacement rates obtained using a conventional extensometer and an optical fiber system.

Key words: extensometer, landslide monitoring, optical fiber, Romania

Received: October, 2010; Revised final: July, 2012; Accepted: August, 2012
