Geophysical Research Abstracts, Vol. 7, 09004, 2005
SRef-ID: 1607-7962/gra/EGU05-A-09004

Change Detection techniques for slope instability early-warning

C. Tarantino(1), A. Baraldi (1), G. Pasquariello (1), P. Blonda (1)

- (1) ISSIA-CNR, Via Amendola 122/D, Bari, ITALY
- blonda@ba.issia.cnr.it

In the framework of the EU project titled: Landslide Early Warning Integrated project (LEWIS EVG1-CT-2001-00055) three historical optical remote sensed data sets have been processed to detect surface features changes which can be correlated with the development of slope instability mechanisms in three different test sites. The attention is focused on man's activity induced surface features changes, such as deforestation and ploughing, which decrease the effective shear strength of unstable slopes and artificial structures construction, which increase shear stress. The data have been used for large area monitoring. The objectives of the proposed paper are: 1) to provide the state of the art in the change detection techniques, both supervised and unsupervised; 2) to provide the limits and the advantages of using remote sensed data to provide early-warning of slope instability; 3) to discuss some validation methodologies of change detection techniques used in this study. The results obtained on three different test sites provided in the framework of LEWIS project will be discussed. Two test sites area located in Italy, the first in Regione Abruzzo and the second in Regione Puglia. The third test site is located in Greece