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A jointly application of geomorphologic, geodetic and geoelectrical techniques for monitoring landslide surface deformations: a case study in Basilicata Region (Southern Italy)

G. Abate (1), G. Basile (2), G. Colangelo (2), V. Lapenna (3) , A. Loperte(3), S.Pascale (5), A. Perrone (3), P. Rutigliano (4), F. Sdao (5), A. Satriano (3)

1. Leica Geosystems SpA, Via Talete, 41 70010 – VALENZANO (BA), (abateg@tin.it)
2. Regione Basilicata Dipartimento Infrastrutture e Mobilita, C.so Garibaldi, 85100 – POTENZA (giuseppe.basile@regione.basilicata.it, gerardo.colangelo@regione.basilicata.it)
3. IMAA-CNR, C.da S. Loja, Tito Scalo, 85050, Potenza
4. Telespazio SpA, Centro di Geodesia Spaziale, C.da Terlecchia 75100 – MATERA, (paolo.rutigliano@telespazio.com)
5. Università degli Studi della Basilicata. CIMA, C.da Macchia Romana, 85100 – POTENZA, (pascale@unibas.it, sdao@unibas.it)

The first results concerning a multidisciplinary approach for the monitoring of landslides located in the Lucano Apennine (southern Italy) is presented and discussed. On March 2006, after a strong rainfall precipitation period in the northern part of Basilicata Region a transrotational slide occurred close Picerno and Tito villages involving building trade and civil infrastructures. The Regional Civil Protection for the complexity of the instability phenomena decided to involve different research groups for studying the landslide area using geological, geomorphological, geodetic (GPS and automatic theodolite) and geoelectrical techniques (active-passive tomographies, self potential maps and TDR probes). The first results represent a valid cognitive support to choose the most appropriate technical solution for strengthening of the slopes and an example of correlation between different multiparametric techniques.