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A method for processing landslide hazard map

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Large scale landslide forecasting for territorial planning and for civil protection purposes is still not accomplished satisfactorily. Large scale forecasting means knowledge of the specific range of the geological, morphological, tectonic, geotechnical and climatic factors, which typically and simultaneously act over the stability of the considered area and of the relative weight which affects them. Many methods of evaluation of the landslide hazard have been developed; they use different approaches: the heuristic one, statistical band methods and finally deterministic methods. If the geometric model, the geological and the hydrogeological ones, and the geotecnical parameterization is representative and reliable, the deterministic models are undoubtedly the most objective of those proposed. Their limit, on a local scale, and even more on a regional scale, comes from the need for long and costly geological, geotechnical and hydrogeological assessments in order for them to be applied. As a consequence, for vast territories euristic and statistical models based on reliable, easy to acquire, objective and if possible remotely determined parameters are always used. Following these statements, the LABIA working group, first adopted the Stevenson (1977) method, and adapted it, the Modified Stevenson method (Glisci et al. 2003), over a large area of the southern Italian Apennine. The reliability of the model was found to be very high. This result was possible, because the benchmark area is poor in lapideous rocks or in cemented soils, or they scarcely participate in landslide phenomenology. Indeed, the Stevenson model cannot evaluate landslide hazard in slopes with such types of materials. Studies on landslides in fractured rock or in cemented sands led to the analysis of methods well suited for those kind of materials. Among those considered from a literature review, attention was focused on the Anbalagan method (1992). After some trials, and considering that Anbalagan and Modified Stevenson methods have a number of parameters in common and that both methods give the best reliability in forecasting landslide occurrence in slopes in totally different materials, the proce-

dures involved in these two methods have been integrated to define a single general evaluation method of the landslide hazard. The method can be utilized by means of implementing a layered db, which describes the distribution over the examined area of the required parameters. The new method has been successfully tested in a wide area of the southern Italian Apennine.