

Monday, 27 May 2013, 14:45–15:15, Géopolis 2224

Seminar in Computational GIScience

<http://igd.unil.ch/geocomp/seminar>

Ivan Marchesini

Open Source softwares applied to landslide forecasts, slope stability modeling and WPS services

This talk briefly describes the use of Open Source softwares for some landslide related applications. Initially the SANF (an acronym for National Warning System for Rainfall-Induced Landslides) is delineated. We focus on the rationale behind the SANF and on the complex spatial data infrastructure (SDI) developed in order to run the model and to publish the results. A case study of concerning the application of r.rotstab (a GRASS GIS model for slope stability analysis developed by Martin Mergili – BOKU University – Wien) is then presented. Finally we describe our experience in the development of some WPS tools (i) to obtain the probability density and the frequency density of landslide areas, (ii) to model the spatially distributed information on the geometrical relationship between bedding planes and local terrain slope, (iii) to partition a territory into slope-units, hydrological terrain subdivision bounded by drainage and divide lines.

Short biography:

Ivan Marchesini is a permanent researcher at the CNR IRPI in Perugia, Italy. CNR-IRPI is a national research institute, part of the National Council of Research (CNR), whose mission is the assessment of geo-hydrological hazard and risk. The Host Institution and, in particular, its Geomorphology group composed by geologists, engineers and physicists, is active in the acquisition and storage of data, mainly Geo Spatial. Ivan Marchesini is a geologist, active in natural hazard modeling and Geo Spatial data management. During his PhD (2000-2003) he worked on Fluvial Dynamics and since then he has been working on Geographic Information Science applied to the geomorphological processes. He is now mainly involved (i) in a project concerning a national warning system for rainfall-induced landslides in Italy but he also works on (ii) landslide susceptibility evaluation applying a three-dimensional slope stability model and on (iii) developing Web Processing Services (WPS) also based on distributed computing for dealing with massive geospatial data.



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