

From landslide inventory mapping to spatial predictive modeling

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Credits: 2 CFU

Number of hours: 16

Objectives:

The course is an introductory class to landslide susceptibility modelling. It starts with the concept of susceptibility and landslide prediction in general, and moves onto exploring what a landslide inventory represents. From there crucial notions to assess the quality and completeness of an inventory will be provided as the foundations for the analyses to be run in the following days. As the susceptibility consists of the likelihood estimated for each spatial element partitioning a given landscape, the course will include a demonstration of how to compute slope units. From these, a data matrix will be obtained to be used via the R programming language for subsequent analyses. There, Generalized Linear and Additive Models will be tested by using codes prepared for the class. Every step of the course, aside from the introductory one, will be an hands-on experience for the attendees and will provide a solid foundation for the use of spatial statistics for any natural hazard prediction.

Date	Time	# hrs	Topic	Teacher(s)
June	10:00 - 12:00	2	Introduction	Tanyas and Lombardo
June	10:00 - 12:00	2	Landslide inventories	Tanyas
June	10:00 - 12:00	2	Landslide size statistics	Tanyas
June	10:00 - 12:00	2	Slope Unit generation	Tanyas
June	10:00 - 12:00	2	Generalized Linear Models in R	Lombardo
June	10:00 - 12:00	2	Generalized Additive Models in R	Lombardo
June	10:00 - 12:00	2	Interpreting susceptibility results	Lombardo
June	10:00 - 12:00	2	Evaluate model performance	Tanyas and Lombardo