

**Rinderer, M., S. Jenewein, A. Ploner u. T. Sönser** (2003): First results of using the process-based model PROMABGIS for runoff and bedload transport estimation in the Lainbach torrent catchment (Benediktbeuern, Germany). EGS-AGU-EUG Joint Assembly 2003, Nice, 6. - 11. April 2003, Poster.

### **Abstract**

As growing damage potential makes society more and more vulnerable to natural hazards, the pressure on the official authorities responsible for the guarantee of public safety is increasing rapidly. Modern computer technology, e.g. Geographical Information Systems (GIS), can provide remarkable help in assessing the risks resulting from natural hazards. The modelling in PROMAB-GIS, which is an user friendly software based on ESRI ArcView for assessing runoff and bedload transport in torrent catchments, is strongly based on interdisciplinary process-orientated field investigations.

This paper presents results of the application of PROMAB-GIS to estimate the runoff and bedload transport potential of the Lainbach catchment area which has repeatedly been affected by heavy rain storms triggering remarkable events. The operational steps needed to gain process orientated, reproducible results for assessing design events in watersheds are highlighted. A key issue in this context is the need for detailed fieldinvestigation of the geo-, bio-, hydro-inventory of a catchment area. The second part of the paper presents the model results for design events. The data of the event which caused severe damage in June 1990 provides a perfect basis for the evaluation of the model. The results show the potential of PROMAB-GIS for assessing runoff and bedload transport in alpine torrent systems.