



## **Rainfall simulation in teaching: potential and limitations at undergraduate and graduate university level**

Nikolaus J. Kuhn

University of Basel, Physical Geography and Environmental Change, Basel, Switzerland (nikolaus.kuhn@unibas.ch)

Rainfall simulation offers the possibility to test the effect of various controlling factors on soil hydrology and erosion in a controlled way. This makes such rainfall simulation easy to plan and thus offers the possibility to use them in teaching at university level. The wide range of courses using rainfall simulation offered in particular at graduate level supports this argument. However, there are several points that need to be considered when designing a course using rainfall simulation. Even a simple experiment often still involves a wide range of processes that interact in a complex way. In this study, several rainfall simulation experiments conducted at all levels of university teaching, both laboratory and field, are presented. Subsequently, key criteria for achieving the desired learning outcomes are discussed, and a process for the development of university courses using rainfall simulation is suggested.