



A Portable Wind and Rainfall Simulator at the University of Basel

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Almost two decades ago the phenomenon of wind-driven rain was introduced into soil erosion research. Most of the current knowledge has been gained from laboratory investigations with stationary wind tunnels, in which pressure nozzles were incorporated. However, freshly sampled and prepared soil substrates do not resemble naturally grown soil very much, so they cannot be used to investigate the effect of wind-driven rain on aggregate stability, surface micromorphology or water drainage. A first attempt to design a Portable Wind and Rainfall Simulator was successfully accomplished at Trier University, Germany. Based on this original prototype, a second simulator was developed at the University of Basel in Switzerland. The setup of the newly designed Portable Wind and Rainfall Simulator, its modifications, and improvements are presented and discussed in this study. The device can be used under both field and laboratory conditions. Wind and rainfall can be simulated independently from each other and at the same time, to further our understanding of the interaction between wind and water erosion.