





## Introduction

Recent laboratory investigations on wind-driven rain showed that wind modifies the characteristics of falling raindrops in many ways. Most importantly,

- the impact angles and impact frequencies as well as
- the drop velocities and drop sizes are modified ( $\rightarrow$  kinetic energy). Consequently, the results indicate that erosion rates increase under the influence of wind.

However, these experiments were mostly accomplished on highly disturbed loose substrates, which cannot reflect the complexity of natural soils. Therefore, field experiments on different sites with varying soil type, slope angle, surface roughness, and soil characteristics were accomplished to explicitly investigate the relevance and variability of wind-driven rain for soil erosion.



Willem Genet Tunnel, The Netherlands



## Methodology Portable Wind and Rainfall Simulator (PWRS)

Pressure- & flow control Honeycomb & ransition section Working section ediment trap Fister et al. 2 rainfall simulator at Freila (Andalusia)

**Characteristics:** Plot size 4 m x 0.7 m; tunnel height 0.7 m; 4 nozzles type 460.608 from Lechler Comp.; water pressure 0.4 bar; rainfall intensity 85-95 mm h<sup>-1</sup>; applied wind velocity 7.5-8 m s<sup>-1</sup>;

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# Variability of the wind-driven rain effect on







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