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Low frequency – high magnitude simulated rainfall events to determine soil losses under scrubland cover in eastern Spain. 2. Winter wet conditions.

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Mediterranean environments are characterised by the summer drought, during which runoff and soil erosion is usually negligible under high intensity thunderstorms, except when hydrophobic layers are present. However, wet winter conditions could cause larger soil and water losses. In the winter of 2006 rainfall simulations of 70 mm h^{-1} for 1 hour were carried out on 24 1 m^2plots (15 to 25 % soil moisture at 0-4 cm depth) at the Soil Erosion Experiment Station of El Teularet-Sierra de Enguera. The plots had $>$ 90 % vegetation cover of *Quercus ilex*, *Pistacea lentiscus*, *Juniperus oxycedrus*, *Brachipodium retusum* and *Cistus albidus*, with organic matter content $>$ 5 % and 3-4 cm of litter cover. Runoff was collected in all 24 plots during the experiment, but values were always $<$ 23 % of the water applied,and average runoff was 7 %, even under the wet winter conditions. Sediment concentration was always $<$ 1.98 g l^{-1} with an average of 0.56 g l^{-1}. Soil erosion was $<$ 0.03 Mg ha^{-1}. These results confirm that soil erosion is negligible under dense Maquia-scrublands on limestone parent material. Forest fire recurrence, grazing and ploughing are likely causes of the traditional high erosion rates under Mediterranean climatic conditions.