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The EROSFIRE project – preliminary results of small-scale and slope-scale runoff plots

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Amongst the European countries Portugal surely stands outs for its dramatic start of the 21st century in terms of wildfire occurrences, with 2003 and 2005 having been especially grave years. The summer-2003 fires provided the background against which the proposal for the EROSFIRE project was written as an attempt to revitalize and renovate soil erosion research in Portugal concerning recently burnt forest areas.

Funded by Portugal's Foundation for Science and Technology (FCT), the EROSFIRE project (POCI/AGR/60354/2004) has, in June 2005, made a start with its overall objective of developing a software tool for soil erosion hazard mapping at the hillslope scale essentially on the basis on rainfall simulation experiments (RSE) and their modelling with selected soil erosion models.

In spite of the fundamental role of RSE's in the EROSFIRE project, runoff plots are employed as well. Small-scale bounded plots identical to the RSE-plots are used to address the representativeness of the RSE-results for natural rainfall conditions, whereas slope-scale open plots are envisaged to evaluate the scaling-up of the RSE-based modelling results. The present poster will focus on the first results of the runoff plots and of the associated monitoring of vegetation recovery, and soil moisture and soil water repellency conditions.

In this first project year, which has as principal aim model parameterization and calibration, fieldwork is being carried out in an area in north-central Portugal that was

affected by a wildfire during early July 2005. In this area, which is largely covered by commercial eucalypt plantations, four slope sections were selected in eucalypt stands for the installation of the runoff plots. The four slope sections were chosen for representing distinct pre-fire soil surface conditions, reflecting different land management practices. At the basis of each slope section, a set of four adjacent open plots each was installed using modified *Gerlach* troughs. In addition, two pairs of small bounded plots (identical to those used in the RSE's) were installed on each slope section.

Data analysis is still in its very initial stages but the first results seem to indicate that the runoff response to the various rainfall events that occurred since the plots' installation was highly variable. Soil water repellency is thought to play an important role therein.