



Where does surface runoff flow in landscapes?

Problem Correct positioning of measures to retain surface runoff and soil sediment in landscapes depends largely on the knowledge of real world runoff flow paths. Prior work to compare real world runoff flow paths with automatically (GIS based) calculated runoff flow paths has shown, that considerable differences between the different approaches sometimes may exist mainly because of manmade linear structures such as open ditches or similar. In order to correctly place retention ponds or similar landscape structures it is therefore of great importance to know the exact place of these features.

Aim

- + For an applied study in the Weinviertel region of Lower Austria a digital map of real world surface runoff flow paths is needed.
- + Results will be compared to automatically calculated flow paths of surface runoff.
- + Implementation of an erosion model for both methods will enable to compare soil loss and the degree of error in retention pond placement without knowledge of correct runoff pathways.

Background The master thesis will be carried out as a joint activity between CTU Prag and the Federal Agency for Water Management in Austria. Field work will be carried out in the Weinviertel region of Lower Austria. Duration of field work is estimated to be around 1 – 2 months. Master thesis needs to be accomplished within 6 months. Working language (and thesis language) will be either English or German. Financial support will be 400 €/month. Travel costs will be covered additionally. Private transport facilities (car, bike...) will be necessary. With given capability and interest further support will be given to publish results adequately. Fieldwork for the master thesis preferably starts in **spring 2017**. Please contact Doc.Ing.Dr. Tomas Dostal or Doc.Ing.Dr. Josef Krasa for additional information.

Approach You will systematically map runoff flow paths in the field within defined subcatchments of the Weinviertel region. Results need to be put into digital format using GIS technology. GIS will then also be used to compare differences of runoff pathways and calculate soil erosion.