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## Particle and aggregates size distribution of soil transported due to surface runoff and rill erosion

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In this contribution the grain size distributions of the soil sediment obtained from soil erosion experiments were analysed. All the tests were done on arable topsoil's, separately the size distribution of the soil aggregates and individual soil particles were evaluated. Soil erosion was initiated under the controlled conditions in the laboratories. The rainfall was artificially generated with use of a nozzle type rainfall simulator. The sediment transported due to the surface runoff and rill erosion was collected from the discharge of the inclined soil erosion plots (slopes 20 – 34°, slope length 4 m).

The soil sediment was collected in four sampling times. The first and the second were collected in fifteen and thirty minutes from the beginning of the simulation, then followed fifteen minutes long pause without raining and then the simulation continued and soil samples were collected again in fifteen and thirty minutes from the beginning of the rain. After ten days long pause whole process were repeated at the same experimental plot contains rills from previous simulation. Experimental plots were vertically divided into two parts. On one part was an eel and on the second part were different types of rolled erosion control products (RECPs) – Enkamat 7010, Biomac-C, coir fibres K700 and K400, jute, Macmat 8.1 with soil, mulch, hay and nonwoven. The influence of RECPs to the grain size distribution was investigated.

Laser diffraction has been selected as a method to determine grain size distribution and device Mastersizer 3000 was used. By the comparison of the grain size distribution, of more than five hundreds samples, the different response to the soil erosion mechanism and the influence of external factors (experimental plot slope, sampling time from the surface runoff and presence of RECPs) on the grain size distribution and soil aggregates content in eroded sediment were investigated. It has been found that both the particle size and aggregates size distribution of the eroded sediment changes considerably in time.

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