



Rainfall interception in mountainous forest – a case study

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Rainfall partitioning by vegetation significantly affects many components of water balance from local to the catchment scale. It also alters water fluxes in soil–plant–atmosphere continuum and further enhances the complexity of processes studied.

The experimental headwater catchment Liz is located in the Bohemian Forest in the southern part of the Czech Republic (0.99 sq. km, altitude 941 m.a.s.l., average temperature 6.3°C, annual precipitation 861 mm). The mountainous forest ecosystem at Liz has been subject of long-term monitoring. The relevant meteorological and hydrological variables were measured at several sites in the catchment. Three sites were selected for rainfall measurement; two sites in a mature forest (spruce and beech) and one in an open area. Throughfall was measured by weighing and tipping bucket rain gauges. Arrays of rain gauges were established in 2009 to capture spatial variation of throughfall on the spruce and beech forest sites. Stem flow was registered for selected specimens. Soil water dynamics in the soil profile was monitored by automated tensiometers and soil moisture sensors based on frequency domain reflectometry.

In the present study, spruce and beech forest interception is studied for two consecutive vegetation seasons. Selected rainfall episodes are analysed in detail with respect to canopy storage capacity and free throughfall and their variation with tree species and in space.