



How is rainfall interception in urban area affected by meteorological parameters?

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Rainfall interception is part of the hydrological cycle. Precipitation, which hits vegetation, is retained on the leaves and branches, from which it eventually evaporates into the atmosphere (interception) or reaches the ground by dripping from the canopy, falling through the gaps (throughfall) and running down the stems (stemflow). The amount of rainfall reaching the ground depends on various meteorological and vegetation parameters.

Rainfall, throughfall and stemflow have been measured in the city of Ljubljana, Slovenia since the beginning of 2014. Manual and automatic measurements are performed regularly under *Betula pendula* and *Pinus nigra* trees in urban area.

In 2014, there were detected 178 rainfall events with total amount of 1672.1 mm. In average *B. pendula* intercepted 44% of rainfall and *P. nigra* intercepted 72% of rainfall. In 2015 we have detected 117 events with 1047.4 mm of rainfall, of which 37% was intercepted by *B. pendula* and 60% by *P. nigra*.

The effect of various meteorological parameters on the rainfall interception was analysed in the study. The parameters included in the analysis were rainfall rate, rainfall duration, drop size distribution (average drop velocity and diameter), average wind speed, and average temperature.

The results demonstrate decreasing rainfall interception with longer rainfall duration and higher rainfall intensity although the impact of the latter one is not statistically significant. In the case of very fast or very slow rainfall drops, the interception is higher than for the mean rain drop velocity values. In the case of *P. nigra* the impact of the rain drop diameter on interception is similar to the one of rain drop velocity while for *B. pendula* increasing of drop diameter also increases the interception. As expected, interception is higher for warmer events. This trend is more evident for *P. nigra* than for *B. pendula*. Furthermore, the amount of intercepted rainfall also increases with wind although it could be relatively high in case of very low wind speeds.