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Variability of water status and dynamic at a hillslope scale. A case study.

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Networks of tree hedges are not directly productive landscape structures that regulate the exchanges of mass and energy. Most models take into account hedges distance to the water as functional factor. The question of the intrinsic heterogeneity of the hedge based on physical, hydrological, topographical and biophysical not taken into account.
The aim of this paper is to present the monitoring of the variability of the variables on an experimental site (The long term ecological research area of Pleine Fougeres). The site is well characterized in terms of soil and land use.
The site consists of three tree hedges perpendicular to the slope of the hillside located at different levels of the slope, from top to bottom, near a wetland. Different measuring devices have been positioned, giving hydrological, pedological, eco-physiological and meteorological information. Their location depends on the distance to the hedges, the distance from the valley bottom, and depth.. The instruments are piezometers, tensiometers, soil water probes Sentek.
The results presented are an analysis of the variability of water dynamics of the sites functions of different control variables (distance to the hedge, age and LAI of trees, distance to groundwater, soil type ...). Consequences in term of modeling are drawn.