River Basin / River Basin (according EUWWFD)
Operation (from... to...)
Gauge coordinates / Gauge datum:
Catchment area:
Elevation range:
Basin type:
( mountainous, lowland)
Climatic parameters:
(mean precipitation, temperature and other)
Land use:
Soils:
Geology:
Hydrogeology:
(Type of aquifers, hydraulic conductivity)
Characteristic water discharges:
Instrumentation at Uhlířská
Mean groundwater table and stream drainage
Composition of the subsurface acc. to ERT

- Weather stations
- Cerná Nisa river basin / Nisa river basin
- Since 1982, still in operation
- 10°09'E, 50°49'N, 776.17 m a.m.s.l.
- 1.87 km²
- 776 – 886 m a.m.s.l.
- mountainous
- (alpine, mountainous, lowland)
- 1400 mm (1931-60 derived), 4.6°C (1961-1997)
- 95% Norwegian spruce, 5% grassland, single beech trees
- Dystric Cambisol type plays crucial role in transformation of the hydrochemical parameters with the magnitude of streamflow (indirect for pH, el. conductivity; direct for ORP)
- Direct pressure transition in the saturated subsurface is the most probable mechanism of the storm rainfall to flood runoff response Due to low hydraulic conductivity of sedimentary materials overlaid by peat, there is partially pressured mechanism of the storm rainfall to flood runoff response
- The mean residence time of water in the catchment is estimated to approx. 7 years
- Groundwater recharge is approximately 36% of the rainfall, baseflow forms 46% of the total runoff.
- The mean residence time of water in the catchment is estimated to approx. 7 months (env. isotopes). The residence time of the groundwater is estimated in the range of 1-10 years by modelling approach
- Evapotranspiration forms approximately 20% of the annual precipitation
- Snow covers the catchment typically November to April. Major runoff contribution from snowmelt takes place in April and March. Winter season (Nov-Apr) forms 58% of the total runoff.
- Soil profile of Dystric Cambisol type plays crucial role in transformation of the hydrochemical parameters with the magnitude of streamflow (indirect for pH, el. conductivity; direct for ORP)
- Direct pressure transition in the saturated subsurface is the most probable mechanism of the storm rainfall to flood runoff response Due to low hydraulic conductivity of sedimentary materials overlaid by peat, there is partially pressured mechanism of the storm rainfall to flood runoff response
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- 4. Soil profile of Dystric Cambisol type plays crucial role in transformation of the hydrograph interacting soil water in capillary pores and gravitational water in preferential pathways (proven by environmental isotopes)
- 5. Soil profile of Histosol overlying sedimentary aquifer impacts the chemical composition of the outflow. There is strong correlation of hydrochemical parameters with the magnitude of streamflow (indirect for pH, el. conductivity; direct for ORP)
- 6. Direct pressure transition in the saturated subsurface is the most probable mechanism of the storm rainfall to flood runoff response Due to low hydraulic conductivity of sedimentary materials overlaid by peat, there is partially pressured water table observed at the transition zone in between hillslopes with Cambisol and valley with Histosol due to hillslope lateral return flow
- 7. Groundwater recharge is approximately 36% of the rainfall, baseflow forms 46% of the total runoff.
- 8. The mean residence time of water in the catchment is estimated to approx. 7 months (env. isotopes). The residence time of the groundwater is estimated in the range of 1-10 years by modelling approach

**Key references for the basin**