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Methods of suspended sediment measurement: an example from the Zagozdzonka river catchment in Poland

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Suspended sediment (SS) is a traditional indicator of intensity of catchment erosion processes. It is essential parameter for determination of reservoir siltation as well as other hydraulic structures. On the other side, it is an indicator of water quality and the medium of transport for adsorbed contaminants like phosphorus and heavy metals. The Department of Water Engineering and Enviromental Recultivaton at the Warsaw Agricultural University developed and manages the monitoring station at Czarna in central Poland. Since 1962 the scope of investigated parameters grows significantly. Actually at Czarna, which close the 23.4 km2 of lowland mainly agricultural cultivated catchment, the electronic monitoring system with the on-line controlling possibilities via internet is working. The system consists of water level sensors, thermometers, rainfall gauges and turbidity meters for suspended sediment concentration investigations. The other samplers as time integrated bathometers and self-acting bathometers, refrigerated samplers and settling tanks allow collecting samples for suspended sediment grain size distribution analysis as well as concentration depend on flood wave stage. The station collaborates with sedimentation laboratory where the grain size distribution and chemical components of SS are determinate.