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Relation between lag times in winter foods from agricultural watershed

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Investigation carried out by the Department of Hydraulic Engineering of SGGW in Zagożdżonka River have shown an intensive suspended sediment transport during the winter season, when occurring floods are caused by rainfall and snowmelt as well.
The relation between rainfall/snowmelt –runoff - sediment transport have been investigated in small, agricultural catchment in central Poland. The hydrological and meteorological data collected in Zagożdżonka catchment during winter season have been used to calculate lag time of runoff (Lag) and lag time of sediment yield (Lags). Both, Lag and Lags are important characteristics of the instantaneous unit hydrograph (IUH) and instantaneous unit sedimentgraph (IUSG).These characteristics are interrelated.
Field data from Zagożdżonka River catchment have been used to demonstrate the relationship between lag times. The results of investigation show that: a) there is a strong relationship between Lag and Lags; b) in most cases the value of a = Lags/Lag is smaller than 1; c) in case of snowmelt floods there was only poor correlation between parameter a and the total runoff depth (water supply).

Key words: snowmelt floods, winter season, suspended sediment transport, lag time of runoff and sediment yield