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MODELLING PHOSPHORUS INPUTS FROM DIFFUSE AND POINT SOURCES WITH MEPHOS IN GERMANY - A CONTRIBUTION TO THE IMPLEMENTATION OF THE EU WATER LEGISLATION

BJÖRN TETZLAFF¹

¹ B. TETZLAFF, Forschungszentrum Jülich, Germany, b.tetzlaff@fz-juelich.de.

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ABSTRACT The fundamental objectives of the European Union-Water Framework Directive are to achieve a good status of surface water and groundwater resources by 2015. The implementation of measures requires spatially detailed data about sources, pathways and levels of nutrient inputs to receiving water bodies. In this context, water resource managers have great demand in distributed model results. The MEPhos model has been developed at the Research Centre Jülich to quantify mean annual P-inputs from artificial drainage, wash-off, groundwater outflow, soil erosion, rainwater sewers, combined sewer overflows, municipal waste water treatment plants and industrial effluents. Effects of measures can be predicted and scenario analyses can be performed. In an oral contribution the approach and model results for Germany will be presented. This will be done by comparing three typical meso-scale watersheds (River Ems, River Lahn and River Wupper) with different land use patterns. The effects of selected management measures on phosphorus inputs will be demonstrated in scenario runs.

Keywords: Catchment management, Diffuse source pollution, Phosphorus, River basin management, EU Water Framework Directive.