Model: SOBEK River (Elbe) (km -37.4 – 583,4)

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1. General Information	
Model name	SOBEK
Version	River
Author(s) / First publication	Deltares
Contact person (name, email)	Deltares, sobek.support@deltares.nl
Institute	Deltares
Web site	http://www.deltaressystems.com/hydro/product/108282/sobek-suite
General modelling objectives	One-dimensional modelling of hydraulics and sediment transport
Domain of applicability	rivers and canals, large scale modelling
KLIWAS contact (authority, name, email)	Federal institute of Hydrology, Gudrun Hillebrand (Hillebrand@bafg.de)
Model adaption in KLIWAS	Large scale modelling of suspended sediment transport
Model coupling in KLIWAS	Input: discharge based on KLIWAS climate projections (PJ 4.01)
2. Model description	
Model type	physically-based
Temporal discretization	Continuous, 1961-1990, 2021-2050, 2071-2100
Temporal resolution	Simulation time step: 6h, output time step: 3d
Spatial discretization	Distributed, cross sections at every 200m
Spatial resolution	Length of about 620 km + about 130 km in tributaries
Dimension	1D
Short description of model structure detailing main function	Unsteady hydraulic computation with subsequent fractional sediment transport
Scheme of model structure	
Procedure of model parameter estimation	Manual calibration on water level measurement and suspended load measurements
3. Model inputs / Model outputs	
List and characteristics of input variables	discharge based on KLIWAS climate projections, daily values; suspended sediment concentrations in 4 size fractions as function of discharge, derived from measurements
List and characteristics of output variables	water depth [m] cross-sectional mean flow velocity [m/s] suspended sediment concentration [mg/l] suspended load [t]
4. Examples of model applications	
Catchments, objectives etc.	- Elbe and Rhine catchments, hydraulic computation and process-based modelling of fractional sediment transport (including bed load) - catchments and sub-catchments of German waterways, hydraulic computation
Results of existing comparisons with other	-

models	
Application in the framework of KLIWAS	Process-based modelling of suspended sediment transport

5. List of 5 selected references

Arbeitsgemeinschaft SOBEK-Elbe (2009)
Björnsen Beratende Ingenieure, Deltares: Erstellung des eindimensionalen Feststofftransportmodells für die Elbe