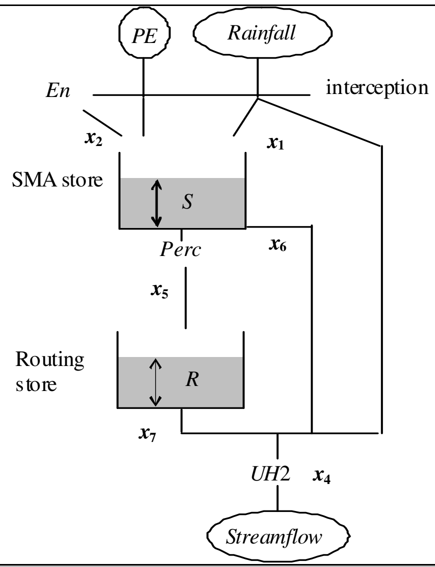
Fact-sheet MOHY

In: Görgen, K., Beermsa, J., Brahmer, G., Buiteveld, H., Carambia, M., de Keizer, O., Krahe, P., Nilson, E., Lammersen, R., Perron, C. & D. Volken (2010): Assessment of climate change impacts on discharge in the Rhine River Basin: Results of the RheinBlick2050 Project. CHR Report No. I-23. pp. 175-177.
Download: http://www.chr-khr.org/files/CHR_I-23.pdf.

1. General Information	
Model name	MOHY (modified version of the MOHYSE model proposed by Fortin and Turcotte, 2007)
Version	Proposed by Cemagref (see Valéry, 2010)
Author(s) / First publication	Valéry (2010)
Contact person (name, email)	Charles Perrin charles.perrin@cemagref.fr
Institute	Cemagref
Web site	www.cemagref.fr/webgr
General modelling objectives	flow simulation
Domain of applicability (catchment types and climate conditions)	Model version widely tested on French catchments
2. Model description	
Model type (empirical, conceptual, physically-based, others)	Conceptual model
Continuous or event-based	Continuous
Possible running time steps	Daily
Spatial discretization (lumped, semi-distributed, distributed)	Lumped
Short description of model structure detailing main function (evaporation, soil moisture accounting, groundwater, routing, snowmelt, etc.)	The model structure can be divided into a production module and a transfer module. The production module consists of: - an interception function - a determination of actual evapotranspiration based on a soil moisture store; - an infiltration function The transfer module consists of: - a direct flow component - a linear leak from the soil moisture store - a linear routing store fed by the SMA store - a unit hydrograph based on a gamma function pure time delay. A degree-day snowmelt module is used for application in catchments influenced by snow.

Scheme of model structure	
3. Model parameters	
Distribution of model parameters (yes/no)	No
Number of free parameters	7 free parameters
Procedure of model parameter estimation (measurement, manual or automatic algorithm, etc.)	Automatic calibration
4. Model inputs / Model outputs	
List and characteristics of input variables (type, time step, spatial resolution, etc.)	Daily series of potential evapotranspiration and catchment areal rainfall Daily series of temperature for snowmelt
List and characteristics of output variables (type, time step, spatial resolution, etc.)	Daily streamflow
5. Examples of previous model applications	
Catchments, objectives, etc.	Application on French catchments
Results of existing comparisons with other models	Valéry (2010)
6. List of 5 selected references	

Fortin, V., and R. Turcotte (2007), Le modèle hydrologique MOHYSE, Note de cours pour SCA7420, Université du Québec à Montréal : Département des sciences de la terre et de l'atmosphère.

Valéry, A., 2010. Modélisation précipitations – débit sous influence nivale. Élaboration d'un module neige et évaluation sur 380 bassins versants. Thèse de Doctorat, AgroParisTech, Paris, 405 pp.