Fact-sheet MORD

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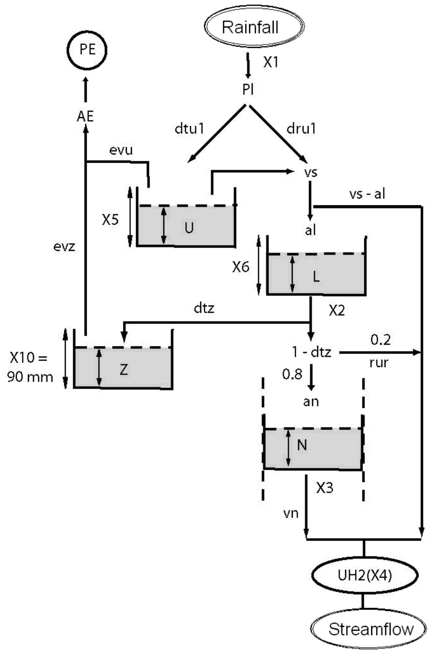
1. General Information	
Model name	MORD (modified version of the MORDOR model proposed by Garçon, 1996)
Version	Proposed by Cemagref (see Mathevet, 2005)
Author(s) / First publication	Mathevet (2005)
Contact person (name, email)	Charles Perrin charles.perrin@cemagref.fr
Institute	Cemagref
Web site	www.cemagref.fr/webgr
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: - a correction factor of rainfall - a non linear soil moisture index to determine (i) the part of raw rainfall that will become effective rainfall and (ii) the actual evapotranspiration; - a lower store in which remaining PE acts The transfer module consists of: - a direct flow component - an infiltration store - a linear routing store - a unit hydrograph. 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	6 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	Mathevet (2005) Le Moine (2008) Valéry (2010)
6. List of 5 selected references	

Garçon, R. (1996), Prévision opérationnelle des apports de la Durance à Serre-Ponçon à l'aide du modèle MORDOR, La Houille Blanche, 5, 71-76.

Mathevet, T., 2005. Quels modèles pluie-débit globaux pour le pas de temps horaire ? Développement empirique et comparaison de modèles sur un large échantillon de bassins versants. Thèse de Doctorat, ENGREF (Paris), Cemagref (Antony), France, 463 pp.

Le Moine, N., 2008. Le bassin versant de surface vu par le souterrain : une voie d'amélioration des performances et du réalisme des modèles pluie-débit ? Thèse de Doctorat, Université Pierre et Marie Curie, Paris, 324 pp.

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.