

TABLE OF CONTENTS

Topic A: Catchment modelling: Ungauged catchments (PUBS)

BELDIMAN Irina N.: Hydrological modelling of polar basin river runoff for Indigirka river as an example	3
MASIH I., UHLENBROOK S., MASKEY S., AHMAD M. D. & ISLAM MD. A.: Estimating ungauged stream flows based on model regionalization – Examples from the mountainous, semi-arid Karkheh river basin, Iran	7
NACHTNEBEL H. P.: Runoff prediction at different modelling scales	11
SEMENOVA Olga M. & VINOGRADOVA Tatyana A.: Use of complex deterministic model of runoff formation processes at basins of any scale	15

Topic B: Accounting for uncertainty

ALMEIDA C. N., PASSERAT DE SILANS A. M. B. & PORTO R. Q.: Can parameters of lumped rainfall runoff models be identified within regions with high rainfall spatial variability?	21
PASSERAT DE SILANS A. M. B., ALMEIDA C. N. & PORTO R. Q.: Uncertainty on reference flows for the award of rights to the use of water in the coastal northeast region of Brazil	25
SUMIHAR J. H., VERLAAN M. & HEEMINK A. W.: Analysis and prediction of time varying tidal components using Kalman filtering	29

Topic C: Ecohydrology: Role of vegetation in hydrological processes; Ecohydrological modelling

BREZEANU GH. & CIOBOIU Olivia: Construction, structure, and functionality of a wetland system built in Romania	37
MFUNDISI Kelebogile B.: Effects of flood duration and vegetation zonation on C and N dynamics of floodplain and riparian vegetation in the Okavango Delta	41
OLSEN Martin, TROLDORG Lars, BOEGH Eva & REFSGAARD Jens Christian: Tuning hydrological models for ecological modelling – improving simulations of low flow critical to stream ecology	45
OYARZUN C. E., GODOY R. & VERHOEST N. E. C.: Interactions between hydrology and biogeochemical cycles of native vegetated mountain watersheds under different management, southern Chile	49
SUGIO S. & OGAWA Y.: Prediction of vegetation change on sand bars in a river channel	53
TAMAI K.: The effect of various forest disturbances on water discharge duration curve	57
WALLIS S. G. & MANSON J. R.: The influence of floodplain characteristics on longitudinal dispersion in a natural channel	61
ZHANG H. & HISCOCK K. M.: Modelling the impact of land-use change on recharge and nitrate loading to the Sherwood Sandstone Aquifer, Nottinghamshire, UK	65

Topic D: Linking atmospheric and hydrological processes

EL-BAROUDY I. & ELSHORBAGY A.: Identification and quantification of the soil moisture response to the atmospheric forcing	71
PASSERAT DE SILANS A. M. B. & WERLANG Lovania Maria: Evidences about the soil evaporation control by temperature gradients in a semi-arid region	75
TEEGAVARAPU R. S. V.: Innovative spatial interpolation methods for estimation of missing precipitation records: concepts and applications	79
RAMEZANIPOUR Mehrdad: Precipitation changes and his influences on the discharge regime of Navrood River	83

Topic E: Processes in the unsaturated zone

DOUBKOVÁ M., SABEL D., PATHE C., HASENAUER S., BARTSCH A. & WAGNER W.: High resolution soil moisture from radar instruments: Study area of northeast Austria and southeast Czech Republic	89
--	----

JORIS Ingeborg, BRONDERS Jan, VAN DER GRIFT Bas, JANSSEN Gijs & SEUNTJENS Piet: An integrated subsurface transport modelling approach to assess regional water contamination of Cd by historic smelter emissions: unsaturated zone modelling	93
LÉVESQUE Denis: Modelling summer runoff on small hilly watersheds covered with thin soils over impermeable bedrock.....	97
ZIOGAS K. & HRISSANTHOU V.: Application of SWAT to Kosynthos River basin	103
<u>Topic F: Surface water quality, thermal load and sediments</u>	
HALL Graham & CRATCHLEY Roger: The use of modelling in the reduction of flood risk for the town of Dolgellau, Wales	111
MANACHE Gemma & MELCHNG Charles S.: Effect of the wastewater treatment levels on the sensitivity of a water-quality model to uncertain model-input parameters	115
NOSS C., SALZMANN T. & STORCHENEGGER I.: Tracer measurements and modelling of longitudinal dispersion - a new approach to evaluate renaturation projects and prediction of contaminant transport at river flows	119
SOHIER C., VANDENBERGHE C., DAUTREBANDE S., MARCOEN J. M. & DEGRÉ A.: Nitrogen leaching forecasting: modelling and measurements	123
TOMBERLIN David: Choosing among costly water quality monitoring schemes: optimal information gathering in the management of surface erosion	127
TREMOSA J., GONCALVES J., MATRAY J.M. & VIOLETTE S.: Hydro-thermo-mechanical behaviour of the Tournemire compacted shale (SE of France)	131
WALLIS S. G.: Some exploration of hidden value in tracer experiments for model calibration and validation	135
<u>Topic G: Coastal groundwater systems and groundwater quality</u>	
DINU Irina, ROTAR Catalin, STOICA Marius & MOLDOVEANU Traian: Hydrogeological study in a chloride contaminated site, Romania	141
MEHRABIAN S. & AMINI A.: Application of geophysical techniques for investigation of geological contaminations due to mine wastes	145
SŁOWIK M.: Estimation of the relative age of alluvial sediments using method of changes of chromium and lead concentration: the case of the Odra River valley (western Poland).....	149
VINK Kees, CIRKEL Gijsbert & DE JONGE Martin: Efficient prediction of nitrate, sulphate and total hardness concentrations in raw water with a flow path approach	153
<u>Topic H: Interaction between surface and groundwater systems; Groundwater modelling</u>	
ADELOYE A. J.: Generalised storage-yield-reliability modelling- Independent validation of the Vogel-Stedinger (V-S) storage-yield-reliability model using a Monte Carlo simulation approach.....	159
CROSBIE R. S., JOLLY I. D., McEWAN K. L., HOLLAND K. L., LAMONTAGNE S., GROTHING MOE K. & SIMMONS C. T.: Surface water – groundwater interactions in River Murray wetlands and implications for water quality and ecology.....	163
HAVLÍČEK Jiří, HOKR Milan & KOPAL Jiří: Non-linear adsorption in a multidimensional and double-porosity model of fractured rock solute transport	167
JOLLY Ian, RASSAM David, GILFEDDER Mat, STENSON Matt, PICKETT Trevor, TURNER Jeff, BARR Anthony, MUDD Gavin, SILBURN Mark, WERNER Adrian, MCMAHON Gerard, JOHANSEN Craig, REID Mark, CHENG Xiang, CHRISTY Brendan, WEEKS Anna & LITTLEBOY Mark: Predicting the interactions between rivers and groundwater pumping.....	171
JUKIĆ Damir, DENIĆ-JUKIĆ Vesna & TESKERA Ivan: Groundwater recharge estimation in karst by combining soil-moisture and groundwater balance approaches: example of the Jadro Spring, Croatia	175
MORAIS Manuel: Trend analysis using nonparametric statistical techniques for detection and evaluation of spatial and temporal chemical changes at a hydrothermal exploitation (Felgueira Spa - Central Portugal).....	179
NOSS C., SALZMANN T. & STORCHENEGGER I.: Indescribable natural flows - differences between field measurements and models of open channel flows.....	183

ŠEMBERA Jan: Calibration of double porosity parameters using a triple porosity model.....	187
VAN CAMP M. & WALRAEVENS K.: Importance of conceptual model adaptation during the development of a predictive groundwater flow model of the Deep Basement Aquifer in Flanders (Belgium)	191
VERBEIREN B., DE SMEDT F. & BATELAAN O.: Improved calibration of groundwater models using baseflow estimates for sub-catchments. Case-study: Upper Alzette, Luxembourg	197
WIESE B. & NÜTZMANN G.: Bank filtration induces transient interface conductivity in time and space.....	201
<u>Topic X1: Predictions: Flood forecasting</u>	
BEN DAOUD A., SAUQUET E., OBLED C., LANG M. & BONTRON G.: A flood forecasting system based on probabilistic precipitation scenarios: performance evaluation and sensitivity analysis to the re-analysis archive.....	207
DIOMEDE T., MARSIGLI C., MONTANI A. & PACCAGNELLA T.: A limited-area ensemble prediction system to drive a flood forecasting chain	211
GATTKER C., FUNKE R., DÖDING G. & NATSCHKE M.: KISTERS Time Series Management system and its integration into flood prediction and flood warning environments	215
LOOS S., VAN ANDEL S. J. & LOBBRECHT A. H.: Anticipatory water management: decision support for real-time operational and long-term strategic use of new meteorological forecast products in flood control	219
NIKOLOV N. A. & MARADJIEVA M. N.: Protection of built and new plan dams against disastrous floods under the climatic change conditions	223
PENG Szu-Hsien, TSAI Chih-Chung, CHEN Su-Chin & FAN Shih-Yi: Flood scenario simulation and disaster estimation of Ba-Ma Creek Watershed in Nantou County, Taiwan.....	227
SAAVEDRA VALERIANO Oliver Cristian , KOIKE Toshio, YANG Kun & YANG Dawen: A quantitative precipitation forecast-based real-time operation of a multi-reservoir system for flood management	231
SCHUMANN A., DIETRICH J. & WANG Y.: Ensemble forecasts and Bayesian averaging to consider uncertainties in flood risk management.....	235
<u>Topic X2: Predictions: Runoff forecasting</u>	
BUCHTELE J. & KOŠKOVÁ R.: Approaches to credible identification of reliable parameters in rainfall - runoff model from long time series	241
COSTA F. S., MACEIRA M. E. P. & DAMÁZIO J. M.: Application of streamflow forecasting models in the Brazilian electric system operation planning	245
DINIZ L. S. & PASSERAT DE SILANS A. M. B.: Regionalization of parameters of a rainfall-runoff model using artificial neural networks and data mining techniques	249
GARGINI A. & PONTIN A.: Flow numerical modelling: an alternative approach to define peat hydraulic properties and direct recharge of an Alpine mire	253
MEHRABIAN S. & AMINI A.: Hydrological modelling of aquifers by using improved IP data	259
SPOLWIND R., FRÖSCHL F. & HEBENSTREIT K.: Runoff forecasting in hydropower industry: a holistic approach through modular assembly	263
<u>Topic Y1: Climate change impacts</u>	
CHARLES S. P. & FU G.: Stochastic downscaling for regional precipitation projections	269
OSSES A. & VARGAS X.: Modelling water availability from a snow influenced basin in central Chile under past scenarios of climate change.....	273
RANGO Albert & MARTINEC Jaroslav: Predictions for snow cover, glaciers and runoff in a changing climate.....	277
WONG Geraldine, METCALFE Andrew V. & LAMBERT Martin F.: The role of ENSO in the characterization of drought in Australia.....	281
ZAMBRANO Mauricio & BELLIN Alberto: Hydrological impact of climate change on a complex basin: from data collection to conceptual model formulation	285
ZEMLIANOV Igor, GORELITS Olga & KRYJOV Vladimir: Modern climate changes and channel network formation in Terek delta	289

Topic Y2: Impacts of land use on water resources

- NAKAYAMA T., FUJITA T., GENG Y. & HASHIMOTO S.:** Simulation of water resource and its relation to urban activity in Dalian City, northern China 295
- RICHMANN A., GÖMANN H. & KREINS P.:** Model based impact analyses of global change and agropolitical developments with regard to the implementation of the Water Framework Directive in the Elbe Basin 299
- RICHMANN A., GÖMANN H., KREINS P., SEIDEL K., HIRT U., TETZLAFF B. & WENDLAND F.:** Future developments of nitrogen balances and suitable combinations of measures to reduce diffuse nitrogen leaching in agriculture in the Weser River basin 303
- ROSOLOVA Zdenka:** The challenges and uncertainties of modelling the impacts of land management changes on flooding: a case study in north-east England 307
- SCHMID W., HANSON R.T., FAUNT C.C. & PHILLIPS S. P.:** Hindcast of water availability in regional aquifer systems using MODFLOW's Farm Process 311
- VIGIAK Olga, NEWHAM Lachlan, RATTRAY Dan, MELLAND Alice, RIDLEY Anna, WHITFORD Jane & CROKE Barry:** Hydrological scaling for predicting catchment response to land management changes ... 315
- VAN WEE T.H. & BIESHEUVEL A.:** Prediction of agro-hydrological effects of a large brackish lake at Wieringen, the Netherlands, with integrated modelling of water and solute transport in variably saturated soils 319

Topic Y3: Management of groundwater and surface water

- ADELOYE A. J. & SHAKI A.:** Modelling and optimisation of the Murzuq Basin aquifer system in Libya for effective water resources management 325
- CASADEI S., BELLEZZA M. & PIERLEONI A.:** A decision support system and the water resource management in the Tiber River Basin 329
- CHOU Frederick N.-F., LEE Hao-Chih & WU Chia-Wen:** Increasing the yield of the joint water supply system of dachia and daan rivers through management..... 333
- CUCCHI F., FRANCESCHINI G., TREU F., ZINI L., FLORA O., LUTMANN A. & STENNI B.:** Hydrogeology and groundwater resource management of the Friuli Venezia Giulia Plain alluvial aquifers, northeastern Italy 337
- ČERMÁKOVÁ H., NOVÁK J. & ŠVIHOVSKÝ J.:** Paper relating to expressing economic value of groundwater reserves..... 341
- DAMÁZIO J. M., MACEIRA Maria Elvira Piñeiro, PENNA Débora Dias Jardim & DE OLIVEIRA Wellington Luis:** Validation of streamflow scenarios for scheduling in the Brazilian hydrothermal electric generation system..... 345
- MANSON J. R.:** UISGE: an unstructured information system for GeoGRAPHICAL Environments..... 349
- MANSON J. R., WALLIS S. G. & DZHUSOEVA V. A.:** An automated MATLAB procedure for computing river mixing coefficients from tracer data..... 353
- MARTINS J. & MONTEIRO J. P.:** Coupling monitoring networks and regional scale flow models for the management of groundwater resources: the Almádena-Odeáxere Aquifer case study (Algarve-Portugal) ... 357
- PEÑUELA-ARÉVALO L. A. & CARRILLO RIVERA J. J.:** The importance of understanding the functioning of prevailing groundwater flow systems for an adequate water and environmental management, the south of the Mexico Basin 361
- PROSHKINA E.:** Simulation for solving management problems of combined surface-ground system 367
- SHARMA A., HUEBNER C., JAIN A. & OSTROWSKI M. W.:** Optimal operation of a reservoir system using predicted inflow..... 371
- ŠOLTÉSZ A. & BAROKOVÁ D.:** Groundwater modelling for improving groundwater-surface water regime in Slovak part of the Medzibodrožie region..... 375
- Author Index**..... 381