

Contents

Contributors	vii
Preface	xi
1 Introduction to Soil Hydrology: Processes and Variability of Hydrological Properties <i>Manoj K. Shukla</i>	1
2 Hydrological Modelling at Mesoscopic Scales Using Global Data Sets to Derive Stream Water Availability Models of River Basins <i>Biswajit Mukhopadhyay and Vijay P. Singh</i>	24
3 An Overview of Some Soil Hydrological Watershed Models <i>Sanjit K. Deb and Manoj K. Shukla</i>	75
4 Modelling Agricultural Management Systems with APEX <i>Xiuying Wang, Pushpa Tuppad and Jimmy R. Williams</i>	117
5 Application of the WEPP Model to Hillslopes and Watersheds in the USA <i>Dennis C. Flanagan</i>	137
6 Application of the WEPP Model to Some Austrian Watersheds <i>Andreas Klik, Khaled Hardan and Hans-Peter Nachtnebel</i>	151
7 Application of the SWAT Model for Ecohydrological Modelling in Germany <i>Martin Volk, Nicola Fohrer, Britta Schmalz and Antje Ullrich</i>	176
8 Spatially Distributed Hydrological Modelling in the Illinois River Drainage Area, Arkansas, Using SWAT <i>Dharmendra Saraswat and Naresh Pai</i>	196
9 Hydrological Modelling: A Case Study of the Kosi Himalayan Basin Using SWAT <i>A.K. Gosain, Sandhya Rao and A. Mani</i> ∞∞∞	211

10	Deep Percolation from Surface Irrigation: Measurement and Modelling Using the RZWQM	231
	<i>Carlos G. Ochoa, Alexander G. Fernald and Steven J. Guldan</i>	
11	CRITERIA-3D: A Mechanistic Model for Surface and Subsurface Hydrology for Small Catchments	253
	<i>Marco Bittelli, Alberto Pistocchi, Fausto Tomei, Pier Paolo Roggero, Roberto Orsini, Marco Toderi, Gabriele Antolini and Markus Flury</i>	
12	Effects of Artificial Drainage on Water Regime and Solute Transport at Different Spatial Scales	266
	<i>Bernd Lennartz, Manon Janssen and Bärbel Tiemeyer</i>	
13	Effect of Land Use and Soil Management on Soil Properties and Processes	291
	<i>Sjoerd W. Duiker</i>	
14	Land Use and Agricultural Management Systems: Effects on Subsurface Drain Water Quality and Crop Yields	312
	<i>Allah Bakhsh and Ramesh S. Kanwar</i>	
15	Climate Data for Hydrological and Agronomic Modelling	329
	<i>Max P. Bleiweiss and A. Salim Bawazir</i>	
16	Climate Change and Soil Hydrology: European Perspectives	350
	<i>Satish Bastola, Suresh Kumar, Conor Murphy and John Sweeney</i>	
17	Modelling the Impacts of Climate Change on Water Balance and Agricultural and Forestry Productivity in Southern Portugal Using SWAT	366
	<i>João Pedro Nunes and Júlia Seixas</i>	
18	Soil Erosion by Water Under Future Climate Change	384
	<i>David Favis-Mortlock and Donal Mullan</i>	
19	Microwave Remote Sensing of Soil Hydraulic Properties	415
	<i>Thomas Schmugge</i>	
Index		427

The colour plate section can be found following p.212