## Contents

**List of Contributors**

**Preface**

1. **Scale Analyses for Land-Surface Hydrology**  
   *Eric F. Wood*  
   page xi

2. **Hillslopes, Channels, and Landscape Scale**  
   *William E. Dietrich and David R. Montgomery*  
   page 30

3. **Scaling in River Networks**  
   *Andrea Rinaldo and Ignacio Rodríguez-Iturbe*  
   page 61

4. **Spatial Variability and Scale Invariance in Hydrologic Regionalization**  
   *Vijay K. Gupta and Edward C. Waymire*  
   page 88

5. **An Emerging Technology for Scaling Field Soil-Water Behavior**  
   *Donald R. Nielsen, Jan W. Hopmans, and Klaus Reichardt*  
   page 136

6. **Scaling Invariance and the Richards Equation**  
   *Garrison Sposito*  
   page 167

7. **Scaling of the Richards Equation and Its Application to Watershed Modeling**  
   *R. Havrskamp, J.-Y. Parlange, R. Cuenca, P. J. Ross, and T. S. Steenhuis*  
   page 190

8. **Scale Issues of Heterogeneity in Vadose-Zone Hydrology**  
   *T.-C. J. Yeh*  
   page 224

9. **Stochastic Modeling of Scale-dependent Macrodispersion in the Vadose Zone**  
   *David Russo*  
   page 266

© Cambridge University Press  
www.cambridge.org
## Contents

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Dilution of Nonreactive Solutes in Heterogeneous Porous Media</td>
<td>291</td>
</tr>
<tr>
<td></td>
<td>Vivek Kapoor and Peter Kitanidis</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Analysis of Scale Effects in Large-Scale Solute-Transport Models</td>
<td>314</td>
</tr>
<tr>
<td></td>
<td>Roger Beckie</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Scale Effects in Fluid Flow through Fractured Geologic Media</td>
<td>335</td>
</tr>
<tr>
<td></td>
<td>Paul A. Hsieh</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Correlation, Flow, and Transport in Multiscale Permeability Fields</td>
<td>354</td>
</tr>
<tr>
<td></td>
<td>Shlomo P. Neuman and Vittorio Di Federico</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Conditional Simulation of Geologic Media with Evolving Scales of Heterogeneity</td>
<td>398</td>
</tr>
<tr>
<td></td>
<td>Yoram Rubin and Alberto Bellin</td>
<td></td>
</tr>
</tbody>
</table>

Index | 419 |