

1. Record Nr.	UNINA9910555059403321
Titolo	Global drought and flood : observation, modeling, and prediction // edited by Huan Wu [and three others]
Pubbl/distr/stampa	Hoboken, New Jersey : , : John Wiley & Sons, , [2021] ©2021
ISBN	1-119-42721-5 1-119-42733-9 1-119-42720-7
Descrizione fisica	1 online resource (355 pages)
Collana	Geophysical Monograph Ser.
Disciplina	363.34929
Soggetti	Floods Droughts Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents -- List of Contributors -- Preface -- Part I Remote Sensing for Global Drought and Flood Observations -- Chapter 1 Progress, Challenges, and Opportunities in Remote Sensing of Drought -- 1.1. INTRODUCTION -- 1.2. PROGRESS IN REMOTE SENSING OF DRIVERS OF DROUGHT -- 1.3. MULTI-INDICATOR DROUGHT MODELING -- 1.4. DROUGHT AND HEATWAVES FEEDBACKS -- 1.5. REMAINING CHALLENGES AND OPPORTUNITIES -- 1.6. CONCLUSION -- REFERENCES -- Chapter 2 Remote Sensing of Evapotranspiration for Global Drought Monitoring -- 2.1. INTRODUCTION -- 2.2. HISTORICAL SKETCH OF ET REMOTE SENSING STUDIES AND ET DATA PRODUCTS -- 2.3. ESTIMATING ET AND MONITORING DROUGHT WITH GEOSTATIONARY SATELLITE THERMAL OBSERVATIONS -- 2.4. DROUGHT MONITORING PRODUCT SYSTEM BASED ON ET REMOTE SENSING -- 2.5. COMBINING ET REMOTE SENSING WITH MICROWAVE SOIL MOISTURE DATA FOR DROUGHT MONITORING -- 2.6. DISCUSSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 3 Drought Monitoring Using Reservoir Data Collected via Satellite Remote Sensing

-- 3.1. INTRODUCTION -- 3.2. DROUGHT MONITORING USING REMOTELY SENSED RESERVOIR DATA -- 3.3. ADOPTING REMOTELY SENSED RESERVOIR DATA TO SUPPORT DROUGHT MODELING APPLICATIONS -- 3.4. FUTURE DIRECTIONS -- 3.5. DISCUSSION AND CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 4 Automatic Near-Real-Time Flood Mapping from Geostationary Low Earth Orbiting Satellite Observations -- 4.1. INTRODUCTION -- 4.2. DATA USED -- 4.3. METHODS -- 4.4. APPLICATIONS -- 4.5. VALIDATION -- 4.6. DISCUSSION -- 4.7. SUMMARY -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 5 Global Flood Observation with Multiple Satellites: Applications in Rio Salado (Argentina) and the Eastern Nile Basin -- 5.1. INTRODUCTION: THE STATE OF THE SCIENCE AND NEED FOR GLOBAL SATELLITE FLOOD MAPPING -- 5.2. METHODS FOR GLOBAL FLOOD OBSERVATION. 5.3. WATERSHED CASE STUDIES: ARGENTINA AND THE EASTERN NILE REGION -- 5.4. RESULTS FROM FLOOD MAPPING IN CASE STUDIES -- 5.5. LIMITATIONS AND FUTURE DIRECTIONS FOR THE UTILITY OF SATELLITE FLOOD-EVENT DATA -- 5.6. CONCLUSION -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 6 Integrating Earth Observation Data of Floods with Large-Scale Hydrodynamic Models -- 6.1. INTRODUCTION -- 6.2. EARTH OBSERVATION FLOOD DATA -- 6.3. INTEGRATION OF EO DATA AND FLOOD MODELS -- 6.4. OUTLOOK -- 6.5. CONCLUSION -- REFERENCES -- Part II Modeling and Prediction of Global Drought and Flood -- Chapter 7 Global Integrated Drought Monitoring with a Multivariate Framework -- 7.1. INTRODUCTION -- 7.2. METHOD -- 7.3. DATA -- 7.4. RESULTS -- 7.5. CONCLUSION -- REFERENCES -- Chapter 8 A Probabilistic Framework for Agricultural Drought Forecasting Using the Ensemble Data Assimilation and Bayesian Multivariate Modeling -- 8.1. INTRODUCTION -- 8.2. REVIEW OF CURRENT DROUGHT FORECASTING SYSTEMS -- 8.3. THE PROPOSED COUPLED DYNAMICAL-STATISTICAL DROUGHT FORECASTING SYSTEM -- 8.4. CASE STUDIES -- 8.5. CONCLUSIONS AND DISCUSSION -- REFERENCES -- Chapter 9 Integrating Soil Moisture Active/Passive Observations with Rainfall Data Using an Analytic Model for Drought Monitoring at the Continental Scale -- 9.1. INTRODUCTION -- 9.2. DATA AND METHOD -- 9.3. RESULTS -- 9.4. DISCUSSION AND CONCLUSIONS -- ACKNOWLEDGEMENTS -- REFERENCES -- Chapter 10 Global Flood Models -- 10.1. INTRODUCTION -- 10.2. TYPES OF GFM AND SPECIFIC EXAMPLES -- 10.3. APPLICATIONS OF GLOBAL FLOOD MODELS -- 10.4. INSURANCE CATASTROPHE MODELS -- 10.5. GFM CREDIBILITY -- 10.6. THE FUTURE OF GFMS -- REFERENCES -- Chapter 11 Calibration of Global Flood Models: Progress, Challenges, and Opportunities -- 11.1. INTRODUCTION -- 11.2. GLOBAL HYDROLOGICAL MODEL CALIBRATION. 11.3. MAIN CHALLENGES OF CALIBRATING GLOBAL HYDROLOGICAL MODELS -- 11.4. EMERGING OPPORTUNITIES -- 11.5. SUMMARY -- REFERENCES -- Chapter 12 Digital Elevation Model and Drainage Network Data Sets for Global Flood and Drought Modeling -- 12.1. INTRODUCTION -- 12.2. GLOBAL BASELINE DIGITAL ELEVATION DATA FOR HYDROLOGICAL MODELING -- 12.3. GLOBAL HYDROGRAPHY DATA SETS -- 12.4. CHALLENGES AND OPPORTUNITIES -- 12.5. SUMMARY -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 13 Fundamental Data Set for Global Drought and Flood Modeling: Land Use and Land Cover -- 13.1. INTRODUCTION -- 13.2. GLOBAL LAND COVER DATA SETS -- 13.3. DISCUSSION -- REFERENCES -- Part III Global Drought and Flood Risk Assessment, Management, and Socioeconomic Response -- Chapter 14 Global River Flood Risk Under Climate Change -- 14.1. INTRODUCTION -- 14.2. MODELING GLOBAL RIVER FLOOD RISK:

GENERAL CONCEPTS AND METHODS -- 14.3. THE GLOFRIS MODELING FRAMEWORK -- 14.4. CAMA-FLOOD AND ISIMIP MODELING FRAMEWORKS -- 14.5. THE GAR-2015 FLOOD RISK FRAMEWORK -- 14.6. THE JOINT RESEARCH CENTRE MODEL -- 14.7. OTHER FLOOD RISK MODELS -- 14.8. CONCLUSIONS -- REFERENCES -- Chapter 15 Direct Tangible Damage Classification and Exposure Analysis Using Satellite Images and Media Data -- 15.1. INTRODUCTION -- 15.2. DATA AND STUDY SITE -- 15.3. METHOD -- 15.4. RESULTS -- 15.5. DISCUSSION -- 15.6. CONCLUSIONS -- ACKNOWLEDGMENTS -- REFERENCES -- Chapter 16 Flood Risk and Monitoring Data for Preparedness and Response: From Availability to Use -- 16.1. INTRODUCTION -- 16.2. CHALLENGES IN UNDERSTANDING AND TRUSTING FLOOD DATA -- 16.3. TWO CASE STUDIES FRAMING THE DISCONNECT BETWEEN FLOOD DATA DEVELOPERS AND DECISION MAKERS -- 16.4. IDENTIFICATION OF COMMON THEMES FOUND IN THE QUESTIONS ASKED WITHIN THE CASE STUDIES -- 16.5. SUGGESTED OPPORTUNITIES TO MOVE TOWARDS NARROWING THE GAP -- 16.6. CONCLUSION. ACKNOWLEDGMENTS -- REFERENCES -- Chapter 17 Global Flood Partnership* -- 17.1. INTRODUCTION -- 17.2. MODELS AND PRODUCTS -- 17.3. GFP ACTIVATIONS -- 17.4. DISCUSSION AND CONCLUSIONS -- REFERENCES -- Chapter 18 Drought and Flood Monitoring and Forecasting: Challenges and Opportunities Ahead -- 18.1. REMOTE SENSING FOR DROUGHT AND FLOOD MODELING -- 18.2. DROUGHT AND FLOOD MODELING -- 18.3. RISK ANALYSIS AND COLLABORATION -- 18.4. PERSPECTIVE -- Index -- EULA.
