

CONTENTS

MAJOR CLIMATE CHANGE MECHANISMS AND HOW THEY AFFECT THE MIDDLE EAST

Michael Ghil.....	1
CLIMATIC TRENDS TO EXTREMES AND REGIONAL MODELING OVER THE E. MEDITERRANEAN	
Pinhas Alpert, S.O. Krichak, I. Osetinsky, M. Dayan, D. Haim and H. Shafir.....	4
THE CLIMATE CHANGE AND WATER RESOURCES PROJECTS OF SOUTHERN TURKEY	
Ibrahim Gurer.....	18

CLIMATE CHANGE

CYCLONE ACTIVITY, PRECIPITATION AND MARINE STORMINESS IN THE EASTERN MEDITERRANEAN REGION: ANALYSIS OF REGIONAL CLIMATE SCENARIO SIMULATIONS

Lionello Piero, Boldrin Ugo, Cogo Stefano, De Zolt Simona, Giorgi Filippo, Galati Maria Barbara, Sanna Antonella, Vicentini Giulia.....	32
---	----

THE IMPACT OF THE NORTH ATLANTIC OSCILLATION ON MIDDLE EAST RAINFALL

Emily Black.....	39
------------------	----

IMPACTS OF GLOBAL CLIMATE CHANGES ON LAKE ECOSYSTEMS IN TURKEY

Onur Kerimoglu, Temel Oguz, Meryem Beklioglu.....	45
---	----

TENDENCIES OF STABLE ISOTOPIC CONTENT OF RAINFALL IN CENTRAL AND EASTERN MEDITERRANEAN.

Spyros P. Lykoudis, Athanassios A. Argiriou.....	46
--	----

LARGE-SCALE CHANGES IN PRECIPITATION AND RUNOFF IN THE MIDDLE EAST UNDER CLIMATE CHANGE – ENSEMBLE CLIMATE MODEL PREDICTIONS AND UNCERTAINTIES.

Debbie L Hemming.....	57
-----------------------	----

TEMPORAL AND SPATIAL VARIATION OF RAINFALL RATE IN MARMARA REGION

Zafer Aslan, Bahar Oguzhan, Zehra Nevin Caglar, Nail Yeniceri.....	67
--	----

ANALYSIS OF PERCENTILE BASED PRECIPITATION INDICES OVER IRAN

Ahmad Asgari, Fatemeh Rahimzadeh and Ebrahim Fattahi.....	73
---	----

REGIONAL CLIMATIC IMPACTS OF GLOBAL WARMING OVER THE EASTERN MEDITERRANEAN

Bariş Onol, Fredrick H. M. Semazzi, Yurdanur S. Unal, H. Nuzhet Dalfes.....	82
---	----

CLIMATE CHANGE IN CENTRAL EUROPE IN CORRELATION WITH CHANGES OF SUN ACTIVITIES

Horst Borchert.....	91
---------------------	----

GENERATION OF WIND STORM IN THE MOUNTAINOUS COAST

Hyo Choi.....	105
---------------	-----

SHALLOW LAKE ECOSYSTEMS OF SEMI-ARID TO ARID MEDITERRANEAN REGION AND GLOBAL WARMING: PREDICTIONS FROM PRESENT

Meryem Beklioglu.....	106
-----------------------	-----

WAVELET – BASED ANALYSIS OF RAINFALL RATE AND EROSIVITY

Zafer Aslan, Deniz Okcu, Ayfer Serap Sogut.....	107
---	-----

CONTEMPORARY CLIMATE CHANGE IN JORDAN

Muwaffaq Freiwan and Mikdat Kadioglu.....	114
---	-----

STUDY OF WARM NIGHTS OVER IRAN DURING LAST DECADES

Fatemeh-Rahimzadeh, Ahmad Asgari and Nooshin Mohammadian.....	128
---	-----

ANALYSIS OF THE DATES OF SPRING AND FALL FREEZING IN THE EAST AND WEST AZARBAIJAN PROVINCES

F.Sahraian, K.Noohi, M. Pedram, A.Sedaghatkerdar.....	137
---	-----

DROUGHT EVALUATION IN ISFAHAN PROVINCE USING STATISTICAL AND GEOSTATISTICAL METHODS	144
Mohammad Reza Yazdani, Morteza Khodaghali, Korosh Shirani, Sattar Chavoshi.....	
FREQUENCY OF THE HEAT WAVES IN ISTANBUL AND ITS RELATION TO CIRCULATION PATTERNS	
Yurdanur Unal and Sibel Menten.....	152
CHANGE IN THE FROST FREE SEASON LENGTH AND NUMBER OF FROST DAYS IN THE WEST AND EAST AZERBAIJAN PROVINCES	
M. Pedram, F. Rahimzadeh, F. Sahraian, K. Noohi.....	162
GAS HYDRATE AND FREE GAS OCCURRENCE VS CLIMATE CHANGES AND INSTABILITY SLOPES FROM SEISMIC DATA ANALYSIS. THE SOUTH SHETLAND MARGIN CASE	
Maria F. Loreto, Umberta Tinivella and Flavio Accaino.....	168
AIR POLLUTION CONTROL PROGRAM IN THE METROPOLITAN CITY OF TEHRAN	
H. Ganjidoust and B. Ayati.....	179
CO₂ EMISSION OF TURKEY'S PROVINCES AND DISTRICTS WITH RESPECT TO INDUSTRIAL CLASSIFICATION	
Ali Can, Aysel T. Atımtay.....	184
ANNUAL AND SEASONAL TREND PATTERNS OF CLIMATE CHANGE IN TURKEY	
Ulas Im, Mete Tayanc.....	191
RELATIONSHIP BETWEEN SEA-SURFACE TEMPERATURE ANOMALIES AND PRECIPITATION ACROSS TURKEY	
Bradford S. Barrett.....	201

HYDROLOGY AND HYDROGEOLOGY

IMPACT OF GLOBAL WARMING ON THE EUPHRATES-TIGRIS WATERSHED	
Jason P. Evans.....	209
SEASONAL FORECAST OF DANUBE RIVER FLOW ANOMALIES BASED ON ITS STABLE TELECONNECTIONS WITH THE GLOBAL SEA SURFACE TEMPERATURE AND PRECIPITATION FIELDS	
Norel Rimbu, Constanța Boroneanț, Mihai Dima, Antoaneta Stanciu.....	219
EVALUATION OF RUNOFF AND PEAK FLOOD CHANGES FOR A PERIOD OF TIME	
Mohammad Reza Yazdani, Sattar Chavoshi, Bahram Saghaian, Mehdi Vafakhah.....	220
POSSIBLE EFFECT OF THE GLOBAL CLIMATE CHANGE ON WATER RESOURCES AND FLOODS IN TURKEY	
M. Sait Tahmisioglu, Omer Karaca, A. Deniz Ozdemir, Hamza Ozguler.....	227
MODELING FOR CLIMATE CHANGE EFFECTS IN THE GEDİZ AND BUYUK MENDERES RIVER BASINS	
Okan Fistikoglu, Sevinc Ozkul, Nilgun Harmancioglu.....	235
EFFECTS OF CLIMATE CHANGE AND ARIDITY ON ERGENE RIVER BASIN WATER PRODUCTIVITY	
M. Dogan Kantarci.....	246
WINTER PRECIPITATION AND SNOWFALL IN THE KOREAN COAST	
Hyo Choi.....	259
TRADING WATER IN REGIONAL MARKETS	
Ibrahim Gurer.....	261
THE CAMI PROJECT: HIGH-RESOLUTION SEISMIC SURVEY TO STUDY SHALLOW AQUIFER	
M. Giustiniani, F. Accaino, E. Del Negro, U. Tinivella and D. Nieto Yabar.....	276

THE HYDROLOGIC CYCLE IN THE EASTERN MEDITERRANEAN FOR A DOUBLE-CO₂ SCENARIO: PRELIMINARY RESULTS IN DOWNCALING FROM ATMOSPHERIC GENERAL CIRCULATION MODEL OUTPUT

Francois Vandenberghe, Andrea Hahmann, Yubao Liu, Dorita Rostkier-Edelstein, Scott Swerdlin, Thomas Warner, David Yates, and Wei Yu..... 282

LAND USE SYSTEMS, SOILS, VEGETATION AND SOIL DEVELOPMENT

GLOBAL CLIMATE CHANGE: EFFECT ON AGRICULTURE FOOD SECTOR IN SRI LANKA IN THE YEAR 2025.

Senanayake Nanda and M.T.M.D.R. Perera..... 288

CLIMATE AND VEGETATION IN THE MIDDLE EAST: INTER-ANNUAL VARIABILITY AND DROUGHT FEEDBACKS

Benjamin F. Zaitchik, Jason P. Evans, Roland A. Geerken, and Ronald B. Smith..... 298

EFFECTS OF ENVIRONMENTAL CONDITIONS ON WATER STATUS AND PHOTOSYNTHETIC ACTIVITY IN OLIVETREES (*Olea europaea* L. cv “Chemlali”) UNDER NON IRRIGATED FIELD CONDITIONS

Chedlia Ben Ahmed, Bechir Ben Rouina, Mekki Boukhris..... 309

EFFECTS OF ENVIRONMENTAL CONDITIONS ON OLIVE TREE (*Olea europaea* L. cv Chemlali) UNDER IRRIGATED FIELD CONDITIONS

Chedlia Ben Ahmed, Bechir Ben Rouina, Mekki Boukhris..... 320

POTENTIAL IMPACTS OF CLIMATE CHANGE ON IRRIGATED CROP WATER REQUIREMENTS IN TURKEY: A MODELING STUDY

Mutlu Ozdogan..... 331

LAND USE CHANGES IN THE JORDAN VALLEY AND THE IMPACT OF A CLIMATE CHANGE ON IRRIGATION WATER REQUIREMENTS

Ibrahim M. Oroud..... 341

OPPOSITE TRENDS IN LIFE STAGES OF ANNUAL PLANTS CAUSED BY DAILY RAINFALL VARIABILITY — INTERACTION WITH CLIMATE CHANGE

Martin Koechy..... 347

ADAPTING A LAND USE CHANGE MODEL TO THE JORDAN RIVER REGION

Jennifer Koch and Rüdiger Schaldach..... 358

DECISION MAKING

USING A COST-BENEFIT ANALYSIS TO SELECT THE OPTIMAL FLOOD PROTECTION MEASURES

Leo De Nocker, Steven Broekx, Inge Liekens, Dirk Bulckaen, Steven Smets, Johan Gauderis..... 365

ADVANCED USE OF ELECTRICAL METHODS IN THE STUDY OF THE AQUIFERS: THE CAMI PROJECT EXPERIENCE

Antonio Bratus, Giovanni Santarato, Riccardo de Nardi..... 372

INTERACTIVE SIMULATION GAME FOR INTERNATIONAL CARBON EMISSIONS TRADING

Ali Kerem Saysel, Fırat Incioglu..... 377

ENERGY CONSUMPTION EFFECTS ON AIR POLLUTION IN I.R.IRAN

B. Ayati and H. Ganjidoust..... 387

THE PAST AS A KEY FOR THE FUTURE

CLIMATE CHANGE AND CRISIS IN OTTOMAN TURKEY AND THE BALKANS, 1590-1710

Sam A. White..... 392

EXPANSION AND RETRACTION: PRECIPITATION-INDUCED CHANGES IN HUMAN SETTLEMENT	
Frank Hole.....	411
WATER, LIFE AND CIVILISATION - A 5-YEAR MULTIDISCIPLINARY PROJECT	
Steven Mithen, Emily Black.....	423
LONG-RANGE FORECASTING AND THE SCIENTIFIC BACKGROUND TO JOSEPH'S INTERPRETATION OF PHARAOH'S DREAMS	
Yizhak Feliks and Michael Ghil.....	428
 POSTERS	
 EXTREME MAXIMUM AND MINIMUM TEMPERATURE TENDENCIES OVER TURKEY WITHIN LAST DECADES	
Yurdanur Unal.....	431
APPLICATION OF UNDERGROUND DAMS FOR GROUNDWATER AQUIFER RECHARGE AND CONTROL OF QANATS WATER	
Mohammad Reza Yazdani, Korosh Shirani, Feizollah Rahnema, Morteza Khodagholi, Mohammad Azad.....	432
THE CHANGES IN THE SUMMER SEASON LENGTH IN THE MIDDLE EAST	
Yair Goldreich and Zipora Chermoni.....	440
VARIATION OF GROWING SEASON LENGTH (GSL) OVER SECOND HALF OF 20TH IN IRAN	
A. Sedaghat Kerdar and F. Rahimzadeh.....	447
THE CAMI PROJECT: NON-CONVENTIONAL SEISMIC ANALYSIS TO CHARACTERIZE THE SHALLOW AQUIFER	
Umberta Tinivella, Flavio Accaino, Michela Giustiniani and Stefano Picotti.....	457
EVIDENCE OF CLIMATE CHANGES ON THE UPPER PLEISTOCENE AND HOLOCENE DEPOSITS OF THE VENICE LAGOON, ITALY	
Luca Baradello, Luigi Tosi, Guiliano Brancolini, Ferica Rizzetto.....	465
DETECTING AND MAPPING SPRINGS INTO CLAY SOILS WITH GPR	
Luca Baradello.....	472
THE PLACE NAMES REFERRING TO WETLANDS AS A KEY TO UNDERSTANDING HISTORICAL CHANGES OF THE MEDITERRANEAN WETLANDS. APPLICATION TO THE DOÑANA NATURAL PARK	
Arturo Sousa, Julia Morales, Pablo García-Murillo, Leoncio García-Barrón and Sukran Sahin.	477
TEMPORAL ANALYSIS OF THE NORTH SEA-CASPIAN PATTERN INDEX (NCPI): a semi - empirical integration approach	
Hasan Tath and Yunus Borhan.....	483
VARIATIONS OF HEAVY RAINFALL AND SEA SURFACE TEMPERATURE IN THE KOREAN COAST UNDER THE PASSING OF TYPHOON WITH STRONG WIND	
Hyo Choi.....	492
EVALUATIONS ON AIR POLLUTION FROM SHIPS FOR GLOBAL AND BOSPHOROUS: EFFECTS ON CLIMATE CHANGE	
Huseyin Toros, Ali Deniz.....	493
 AUTHOR INDEX	 500
PARTICIPANTS LIST	502