

CONTENTS

1. Oral Presentations

Keynote Presentation

Pearlmutter David, Berliner Pedro, Shaviv Edna

Current Research and Challenges in Urban Climate
research in Arid Regions..... 28

Turbulent Exchange between the Urban Surface and its Boundary Layer

**Adegoke Jimmy, Balogun Ahmed, Vezhapparampu Sajith,
Mauder Matthias**

Urban surface energy and moisture flux measurements in the
Kansas City Metropolitan Area (KC-FLUXMEX)..... 32

Moriwaki Ryo, Kanda Manabu, Moriizumi Takanobu

Vertical profile and turbulent transfer of heat, water vapor, and
carbon dioxide at a suburban sublayer..... 36

Longley Ian, Gallagher Martin

Particle and sensible heat fluxes measured by eddy covariance
above and within an urban canopy..... 40

Davies Fay, Middleton Doug, Collier Chris

Comparison of rural and urban turbulence and stability parameters
from ISB52 in London..... 44

Kouznetsov Rostislav

Estimation of vertical momentum flux in the urban boundary layer
by means of acoustic sounder..... 48

Observations of the Urban Surface Energy Balance and Transfer Coefficients

Soux Andres, Oke Tim R., Nuñez Manuel, Wilson Matthew

Measuring longwave radiative flux divergence in an urban canyon... 52

**Chagnon Frederic, Morneau Gilles, Benjamin Mario, Harvey Bruno,
Lemonsu Aude, Belair Stephane, Mailhot Jocelyn**

Preliminary results of the 2005 Montreal Urban Snow Experiment... 56

Myagkov Mikhail

The structure and anomalies of the surface heat balance in
Moscow..... 59

Fortuniak Krzysztof, Klysik Kazimierz, Siedlecki Mariusz
New measurements of the energy balance components in Łódź.....64

Hagishima Aya, Narita Ken-ichi, Sugawara Hirofumi, Tanimoto Jun
Field measurement on convective heat transfer coefficient of
full-scale 2D canopy..... 68

**Narita Ken-ichi, Hagishima Aya, Tanimoto Jun, Kanda Manabu,
Kawai Toru, Kanega Masahiko**
Outdoor scale model experiments of the local bulk transfer
coefficient for urban surfaces with a water evaporation method.....72

Anthropogenic Heat

Sailor David, Heiple Shem, Hart Melissa
Modeling the effects of anthropogenic heating on the Urban Heat
Island - the role of spatial scale..... 76

Henninger Sascha
Micro scale climatological and air quality modifications during a
fair-sized event..... 80

Kikegawa Yukihiro, Kondo Hiroaki
Sensitivity analysis of the interaction process between air
temperature and anthropogenic heat in the urban canopy layer
over Tokyo metropolitan area..... 84

Shimoda Yoshiyuki, Narumi Daisuke, Mizuno Minoru
Environmental impact of the Urban Heat Island:-Cause-effect
chain and impact on energy consumption..... 88

Interactions between Urban Climate and Emissions

Eliasson Ingegard, Lindén Jenny, Thorsson Sofia, Lindqvist Sven
Urban climate and air pollution in Ouagadougou, Burkina Faso..... 92

Bridgman Howard
Air pollution, meteorology and management in a small city in
Eastern Australia..... 96

Baros Zoltán
Characteristics of noise propagation under various weather
conditions in the northern part of Debrecen (East Hungary)..... 100

**Lokoshchenko Mikhail A., Elansky Nikolay Ph., Skorokhod Andrey I.,
Belikov Igor B., Isaev Anatoly A., Semenova Natalia V., Zvyagintsev
Anatoly M.**
Some features of air pollution in the Moscow megapolis..... 104

Sailor David, Bontempo Brian, Hart Melissa, Semenza Jan A multi-faceted approach to assessing human response to extreme heat, poor air quality, and public advisories.....	108
Bezpalcová Klára, Janour Zbynek, Leitl Bernd, Schatzmann Michael Travelling time of a passive pollutant in an idealized urban canopy..	112
Holst Thomas, Rost Jutta, Mayer Helmut Meteorological indicators for enhanced PM10 concentrations.....	116
Minoura Hiroaki, Takahashi Katsuyuki, Chow Judith C., Watson John G. Multi-year trend in PM mass, EC, OC, and ions in downtown Tokyo, Japan.....	120

Air Quality Modelling

Passoni Linda, Poluzzi Vanes, Deserti Marco, Stortini Michele, Minguzzi Enrico, Bonafe Giovanni, Zauli Stefano Modelling urban air quality and population exposure with different emissions scenarios.....	124
Sansone Maria, Pernigotti Denise, Bressan Massimo, Rossa Andrea, Ferrario Massimo A multiple regression approach to forecasting PM10 concentrations for the city of Padua, Italy.....	128
Løvås Terese, Mastorakos Epaminondas Reduced chemistry and the effect of small-scale segregation on the prediction of emissions close to the polluting source.....	132

Carbon Exchanges in Urban Areas

Henninger Sascha Temporal and spatial influencing of urban atmospheric carbon dioxide concentration.....	136
--	-----

Urban Effects on Mesoscale Climate

Grossman-Clarke Susanne, Zehnder Joseph A. Urban induced mesoscale circulations in an arid region.....	140
Hidalgo Julia, Masson Valery, Pigeon Gregoire Analysis of a summer event of the experimental campaign CAPITOUL.....	144
Leroyer Sylvie, Calmet Isabelle, Mestayer Patrice Airflow analysis over the city of Marseille: Breeze interactions and impact of the city representation in the models.....	148

Kallistratova Margarita

Wind field in Moscow boundary layer: difference between downtown and rural sites..... 152

Levy Ilan, Dayan Uri, Mahrer Yitzhak

Coastal recirculation in the East Mediterranean and its effect on the dispersion of air pollutants..... 156

Kadygrov Evgeny, Khaykin Miki, Kuznetsova Iren, Miller Evgeny, Nakhaev Murat

Study of urban heat island on the basis of stationary and mobile microwave temperature profilers data..... 160

Turbulence Within and Above the Urban Surface Layer**Christen Andreas, Van Gorsel Eva**

Coherent structures in urban roughness-sublayer turbulence..... 164

Hamlyn David, Britter Rex, Hilderman Trevor

Investigation of flow patterns and canopy-top exchanges in urban-like roughness arrays - A combined approach using laser doppler velocimetry, qualitative flow visualization and computational fluid dynamics..... 167

Inagaki Atsushi, Kanda Manabu

The coherent structure of turbulence over a reduced urban scale model..... 172

Watanabe Takeaki, Ooka Ryoza, Takahashi Takeo, Kato Shinsuke

Heat and momentum flux properties in the Urban Boundary Layer -Wind tunnel experiment and numerical simulation..... 176

Flow and Dispersion within Street Canyons**Sugawara Hirofumi, Ogawa Hiroko, Hagishima Aya, Narita Ken-ichi, Tanimoto Jun**

Observation of stability-influenced canyon flow patterns..... 180

Weber Stephan

Variability of fine particle concentrations within a busy street canyon..... 184

Sandberg Mats, Linden Elisabet, Westerberg Ulla, Claesson Leif

Air flow pattern and pressure distribution within a street network in an urban area with a high building area density..... 188

Watanabe Hironori, Mochida Akashi, Junimura Yoshiki, Iwata Tatsuaki, Hataya Naoko, Sakaida Kiyotaka, Yoshino Hiroshi

Comparison of the thermal environment and pollutant diffusion within the several types of street canyon based on field observations..... 192

Akashi Mochida

CFD Analyses on outdoor thermal environment and air pollutant diffusion in street canyons under the influences of planted trees and moving automobiles..... 196

Sha Weiming

Development and applications of an urban meteorological numerical model in cartesian coordinate..... 200

Urban Human Biometerology**Katzschner Lutz**

A simplified method to derive thermal comfort conditions in open spaces..... 201

Thorsson Sofia, Knez Igor

Influences of culture and environmental attitude on thermal, emotional and perceptual evaluations of outdoor spaces..... 205

Westerberg Ulla, Linden Elisabet, Nilsson Håkan, Fredrik Lindberg

Wind comfort in urban spaces - Results from case studies in two Nordic cities..... 209

Blazejczyk Krzysztof, Kunert Anna

Differentiation of bioclimatic conditions of urban areas (the case of Poland)..... 213

Johansson Erik, Emmanuel Rohinton, Rosenlund Hans

The influence of urban design on outdoor thermal comfort in the hot-humid city of Colombo, Sri Lanka..... 217

Sawasaki Shinsuke, Ooka Ryoza, Sakoi Tomonori, Tsuzuki Kazuyo, Minami Yuriko

Study on thermal evaluation method for hot outdoor environment.. 221

Gabriel Katharina, Endlicher Wilfried

Human vulnerability to heatwaves in Berlin, Gemany..... 226

Petralli Martina, Morabito Marco, Cecchi Lorenzo, Torrigiani Tommaso, Bartolini Giorgio, Orlandini Simone

Relationship between emergency calls and hot days in Summer 2005 (Florence - Italy)..... 230

Andrade Telma, Freire Tereza, Nery Jussana, Katzschner Lutz

Thermal comfort studies in a humid Tropical city..... 234

Ono Takeshi

Study on convective heat transfer of a human body to evaluate the outdoor thermal environment..... 238

Climatic Performance of Urban Greenspace

Moriyama Masakazu, Takebayashi Hideki

Estimation of sensible heat flux from green roof and high reflectivity roof for mitigation of Urban Heat Island..... 242

Shashua-Bar Limor, Potchter Oded, Bitan Arie, Boltansky Dalia, Yaakov Yaron

Climatic performance of urban trees under various building heights and densities in the Mediterranean Climate - An empirical and analytical study in Tel Aviv..... 246

Shpirt Simon, Potchter Oded, Bar (Kutiel) Pua, Yaakov Yaron

Micro-climate behavior in urban parks located at a hot, arid climate zone. The case of Beer-Sheva, Israel..... 250

Nakai Atsushi, Yoshida Shinji, Ooka Ryo

Study of a method to evaluate the shading effect of street trees on solar radiation based on field observation..... 254

Potchter Oded, Goldman Dafna, Kadish David, Iluz David, Yaakov Yaron

Climatic behavior of a manmade oasis in an extremely hot, dry zone in different seasons..... 258

Cohen Pninit, Potchter Oded, Bitan Arie

The correlation between climatic conditions in different designed urban parks and their pattern of use..... 262

Novel Radiative, Thermal and Air Quality Modelling Methodologies

Milliez Maya, Musson-Genon Luc, Carissimo Bertrand

Validation of a radiative scheme for CFD modeling of heat transfers between buildings and flow in urban canopies..... 266

Kanda Manabu, Toru Kawai, Kenichi Narita, Aya Hagishima, Ryo Moriwaki

A comprehensive outdoor scale model experiment for urban climate (COSMO)..... 270

Kawai Toru, Kanda Manabu

Evaluation of a Simple Urban energy balance Model for Meso-scale simulation (SUMM) with Comprehensive Outdoor Scale Model experiment for urban climate (COSMO)..... 274

Huang Hong, Shinsuke Kato, Mohammed Mahmoud Farghaly Bady, Ryo Ooka

Development of contribution ratio of pollutant sources to urban air quality by means of CFD..... 278

Mohammed Mahmoud Farghaly Bady, Kato Shinsuke, Takeo Takahashi, Huang Hong	
Study of the effects of ambient wind direction on flow characteristics and purging flow rate inside a domain located within an urban street canyon.....	282
Kondo Hiroaki, Toukairin Takayuki, Tomizuka Takayuki	
A numerical calculation of roadside diffusion of NO _x and heat from automobiles.....	286
Ferrario Massimo Enrico, Pernigotti Denise, Rossa Andrea, Sansone Maria	
Presentation and first assessment of a radiometer network in the Italian region Veneto.....	288
 Modelling Flow from the Building scale to Meso scale	
Liu Gang, Liu Hongnian, Jiang Weimei	
Influence of dynamical effects of urban buildings on turbulent characteristics of Convective Boundary Layer.....	292
Letzel Marcus Oliver, Kanda Manabu, Raasch Siegfried	
A new dimension of Urban Climate Modelling with parallel Large-eddy Simulation.....	296
Ohashi Yukitaka	
Deformation of local circulations developed over both coastal and inland urban areas: Numerical study.....	300
Solazzo Efisio, Dudek Agnes, Oxizidis Simos, Britter Rex, Thor Erik Nodeng	
From meso-scale to street-scale: a downscaling procedure approach by using statistical and CFD models. The Lisbon case study.....	304
 Modelling the Urban Surface Energy Balance	
Krayenhoff Scott, Voogt James	
A micro-scale 3-D urban energy balance model for studying surface temperature.....	308
Arnfield A. John	
Surface controls on exchanges of sensible heat between the urban surface and its boundary layer: results based on simulation experiments.....	312
 Development of Assessment Tools for Urban Climate	
Ooka Ryoza	
Development of assessment tools for urban climate.....	316

Climatic Performance of Urban Greenspace

- Yoshida Shinji, Ooka Ryozo, Mochida Akashi, Murakami Shuzo, Tominaga Yoshihide**
Development of three dimensional plant canopy model for numerical simulation of outdoor thermal environment..... 320
- Yoshida Atsumasa, Sugioka Masahiro**
Fundamental study on thermal comfort index in outdoor space based on human thermal load..... 325
- Tablada de la Torre Abel, Blocken Bert**
Airflow conditions and thermal comfort in naturally-ventilated courtyard buildings in a tropical-humid climate..... 330
- ## Urban Heat Islands: their Nature, Genesis and Mitigation
- Unger János, Balazs Bernadett, Sumeghy Zoltan, Gal Tamas**
Multiple variable model for estimating the maximum UHI using 2 and 3 dimensional surface parameters..... 334
- Tomita Tomohiko, Kusaka Hiroyuki, Akiyoshi Ryo, Imasato Yoshiyuki**
Thermal and geometric controls on the rate of near-surface air temperature, changes in a medium-size, mid-latitude city..... 338
- Sasaki Kiyoshi, Mochida Akashi, Yoshida Tomohiro, Yoshino Hiroshi, Watanabe Hironori**
Comparison of heat balance mechanisms in three different cities facing the Pacific Ocean based on numerical analyses of mesoscale climate..... 342
- Unger Janos, Gal Tamas, Balazs Bernadett, Sumeghy Zoltan**
Relationship between the intra-urban variation of sky view factor approximated by a software based tool and air temperature..... 346
- Zhang Hongbin, Hanali Keisuke, Sato Naoki, Izumi Takeki, Aramaki Toshiya**
Future forecasting and mitigation assessment of urban heat island in Chongqing, China..... 350
- Genchi Yutaka, Minami Takuro, Ihara Tomohiko**
Life cycle impact assessment of countermeasures for urban heat island in Tokyo..... 354
- Ichinose Toshiaki, Bai Yingjiu, Kim Yeon-Hee, Nam Jae-Cheol**
Mitigation of thermal stress by a large restoration of inner-city river (Cheong-Gye stream in Seoul)..... 358
- Bai Yingjiu, Mikami Takehiko**
Measurement and mitigation of Urban Heat Islands in Shanghai, China..... 362

Miller James, Atkinson-Palombo Carol, Hartz Donna, Hedquist Brent, The role of vegetation, density, and sky view factor on the microclimate of Tempe, Arizona, USA.....	366
Gonzalez Jorge, Lebassi Bereket, Fabris Drazen, Miller Norm, Bornstein Robert, Chiappari Steven, Zarantonello Sergio Detection of heat islands in California Central valley.....	370
Gonzalez Jorge, Comarazamy Daniel, Luvall Jeff, Rickman Douglas, Picon Ana, Vasquez Ramon An observational and numerical study of the Urban Heat Island in a Tropical coastal city: Case study of San Juan, Puerto Rico.....	374
Hisada Yukiko, Nobuhiro Matsunaga The sea breeze effect on heat island structure in Fukuoka Metropolitan Area facing to the Japan Sea.....	380
Junimura Yoshiki, Watanabe Hironori Influence of land cover and sea breeze to the urban heat island in summer for Dendai City area.....	384
Sakaida Kiyotaka, Egoshi Akira Influences of sea breeze on Urban Heat Island in Sendai, Japan.....	388
Heisler Gordon, Walton Jeffrey, Grant Richard, Grimmond Sue, Hom John, Nowak David, Pouyat Richard, Belt Ken, Yesilonis Richard Land cover influences on air temperatures in and near Baltimore, MD.....	392
Abe Toshio, Ashie Yasunobu Quantification of temperature distribution in and above the Urban Canopy Layer by the Schlieren Method.....	396
Urban sub-layer Parameterisations in Meteorological and Climate Models	
Baklanov Alexander, FUMAPEX team Urbanisation of meteorological and air pollution models: potential and shortcomings.....	400
Erell Evyatar, Williamson Terry The estimation of air temperature in an urban street canyon on the basis of measured data from a meteorological station in the region.....	404
Lindberg Fredrik Modelling the urban micro climate using local governmental 3-D raw data.....	408
Miao Shiguang, Li Pingyang, Wang Xiaoyun Building morphological characteristics and its effect on the wind in Beijing.....	412

Baklanov Alexander, Zilitinkevich Sergej, Baklanov Alexander, Mammarella Ivan, Joffre Sylvain	
The effect of stratification on the surface resistance for very rough vegetated and urban surfaces.....	415
Mailhot Jocelyn, Belair Stephane, Lemonsu Aude	
An overview of urban modelling at the Meteorological Service of Canada.....	419
Warner Thomas	
Multi-scale urban forecasts and climatologies.....	422
FUMAPEX – Integrated Systems for Forecasting Urban Meteorology, Air pollution and Population Exposure	
Finardi Sandro, Dallura Alessio, De Maria Roberta	
Analysis of urban flow structure and dispersion conditions during a severe air pollution episode in Torino - Evaluation of a deterministic air quality forecasting system and verification of urban meteorological parameterisations.....	427
Urban Heat Islands: their Nature, Genesis and Mitigation	
Stewart Iain, Oke Tim	
Methodological concerns surrounding the use of urban-rural station pairs to define Urban Heat Island intensity.....	431
Szymanowski Mariusz, Kryza Maciej	
Evaluation of selected spatialisation techniques in UHI modelling....	435
Szegedi Sandor	
Heat islands in small and medium size towns in Hungary.....	439
Brandt Karsten	
Does an "ideal" urban climate exist ?.....	443
Kawamoto Yoichi, Ooka Ryoza	
Analysis of the radiation field at pedestrian level using a meso-scale meteorological model incorporating the urban canopy model.....	446
Potchter Oded, Yaacov Yaron	
The magnitude of an Urban Heat Island of a city in an Arid Zone: The Case of Beer Sheva, Israel.....	450
Petralli Martina, Morabito Marco, Cecchi Lorenzo, Bartolini Giorgio, Torrigiani Tommaso, Orlandini Simone	
Air temperature distribution at pedestrian level in Florence (Italy) during hot days through fixed and mobile sensors.....	454

Balkeståhl Licínia, Monteiro Ana, Góis Joaquim, Taesler Roger, Quenol Hervé

The influence of weather types on the Urban heat island's magnitude and patterns at Paranhos, Oporto – a case study from November 2003 to January 2005..... 458

Climate-Sensitive Urban Design and Planning

Alcoforado Maria-Joao, Lopes Antonio, Andrade Henrique, Vasconcelos Joao, Vieira Rute

Climatic guidelines for urban planning in Lisbon.....462

Vasconcelos João, Lopes António

Recent urban development trends and its implication on the estuarine breezes in Lisbon, Portugal.....466

Shaviv Edna, Bleiberg Tamar, Capeluto Isaac, Yezioro Abraham

From energy conscious buildings to climate sensitive urban design...470

Building Climates (interior and exterior) and the Climatic Performance of Built Features

Kiyota Nobuyoshi, Kiyota Tadashi, Taniguti Akira, Nakamura Yasuhiro

Observations of the effect of heat island countermeasure with the land and sea breeze of a coastal city. Part 1 - the effect of the geometry of the urban canyon on the city temperature..... 474

Lopes António

A microclimatological study of an urban canyon in Lisbon (Portugal) as a tool to suggest climate guidelines in local urban planning..... 478

Lee Kyoo-Seock, Kim Jae-cheol

The microclimatic impact of high-rise residential building in Seoul... 482

Dimitrova Reneta, Richards Kate, Weeks Mark, Vardoulakis Sotiris, Sini Jean-François, Schatzmann Michael, Borrego Carlos

Evaluation of the wind field around buildings - numerical modelling study..... 485

Taesler Roger

Analyses of impacts of weather and climate on building energy performance with special regard to urban climate characteristics.... 489

Cities and Global Change

Jáuregui Ernesto

Are heat waves increasing their frequency in Mexico City?..... 493

Vaneckova Pavla, Hart Melissa, De Dear Richard, Beggs Paul, McCracken Kevin	
Heat-related morbidity in Sydney, Australia: synoptic climatology of hospital admissions between 1993 and 2001.....	497
Thompson Heather Louise, Grawe David, Salmond Jennifer, Cai Xiaoming	
Modelling the impact of urbanisation on regional climate.....	501
 Climate-Sensitive Urban Design and Planning	
Chebel Labaki Lucila, Pezzuto Claudia	
Urban environment analysis through mobile measurements and city maps: Example in Campinas, Brazil.....	505
Emmanuel Rohinton, Rosenlund Hans, Johansson Erik	
Urban morphology manipulation to promote climate-sensitive urban design in the tropics: the case of Colombo, Sri Lanka.....	509
Kitada Toshihiro, Kobayashi Eisuke, Kurata Gakuji, Ho Chin Siong	
Temperature rise in a tropical south-eastern Asian city, Johor Bahru, Malaysia caused by extended urbanization: Numerical analysis for 1970, 2000, and 2020 based on land-use distribution..	513
Coutts Andrew, Beringer Jason, Tapper Nigel	
Impact of urban planning strategies on regional climate: a case study of Melbourne 2030.....	517
Takebayashi Hideki, Moriyama Masakazu	
Study on urban heat island mitigation effect by using local wind effectively.....	521
Tokairin Takayuki, Kondo Hiroaki, Kikegawa Yukihiro	
Potential of sea breeze from the Tokyo Bay for natural ventilation in buildings.....	525
Rosenlund Hans, Johansson Erik, Emmanuel Rohinton	
UHI and buildings - Effect of urban heating on the energy use in commercial buildings in a warm-humid city.....	528
Mochida Akashi, Miyauchi Satoshi, Takahashi Kengo, Yoshino Hiroshi, Mitamura Teruaki, Yoshida Tomohiro	
Evaluation of spatial distribution of passive cooling effects by cross-ventilation.....	532
Chen Hong, Ooka Ryoza, Huang Hong, Nakashima Madoka	
Study on the impact of sensible heat diffusion from building walls and artificial heat release from buildings on outdoor thermal environment.....	536
Page John	
Fostering international strategic collaboration in urban and building climatology research.....	541

Session in honour of Professor T.R. Oke's retirement**Nunez Manuel, Wilson Matthew**

Radiation divergence cooling: from an urban canyon to the rural environment..... 545

Remote Sensing of Cities and Urban Climate**Chapman Lee, Muller J Peter, Thornes John E, MuMuldroch Stuart**

Potential applications of thermal fisheye imagery..... 549

Voogt James, Krayenhoff E. Scott

Measured and modelled urban thermal anisotropy..... 553

Krayenhoff Scott, Voogt James

Combining sub-facet scale urban energy balance and sensor-view models to investigate effective thermal anisotropy..... 557

Tanaka Takahiro, Moriyama Masakazu, Sasagawa tadashi

Detailed characteristics of summer radiative temperature of public spaces in Osaka central area (Part 1)-Analysis of radiative temperature using thermal imagery and GIS data 561

Sagawa Tomoko, Tanaka Takahiro, Moriyama Masakazu, Sasagawa Tadashi

Analysis of radiative temperature in Osaka central area using thermal imagery and GIS Data (Part 2) - Evaluation of rooftop greening and cool roof..... 565

Cheung Ivan, Azar Derek, Fisherow Michael

Parameterization of urban canyon and roof characteristics for surface urban heat island study using GIS and remote sensing techniques: A case study in Washington, D.C..... 569

Dousset Benedicte, Gourmelon Francoise

Under the 2003 heat wave: surface temperature variability of the Paris basin from time-series satellite images..... 573

Road Climatology and Paved Surfaces**Gustavsson Torbjörn, Bogren Jörgen**

Road weather models for increased road traffic safety..... 577

Andersson Anna, Gustavsson Torbjörn, Bogren Jörgen

Distribution of winter road slipperiness in Sweden..... 580

Almkvist Esben

The internal boundary layer of a paved surface..... 584

Gaunt Hanna

Comparison between measurements and observations of winter road slipperiness..... 588

Urban Impacts on Moisture

- Ihara Tomohiko, Takafumi Sato, Yutaka Genchi, Hiroaki Kondo**
Evaluation of countermeasures to Urban Heat Island using rainfall.. 592
- Hartz Donna A., Brazel Anthony**
Impact of the Urban Heat Island on frosts and freezes in Phoenix,
Arizona, USA..... 594
- Holmer Bjoern, Fredriksson Anders**
Dew as a regulating factor on the urban heat island..... 598
- Yamamoto Nami, Ohmori Hiroo, Matsumoto Jun**
Changes in characteristics of mid-summer rainfall..... 602
- Regimbeau Aurelie, Masson Valery, Morel Sophie, Brion Denis**
Mesoscale modeling of urban impact on summer and winter
precipitation near Paris..... 606
- Han Ji-Young, Baik Jong-Jin**
Urban heat island induced circulation and convection in three
dimensions. Part II: Numerical approach..... 610

II. Posters

Poster Session A

- Arlotta Enrica, Vaccari Francesco, Gioli Beniamino, Matese Alessandro,
Zaldei Alessandro, Miglietta Franco**
Urban CO₂ emission measured by eddy covariance in Roma and
Firenze, Italy..... 614
- Ashie Yasunobu**
Numerical simulation of urban thermal environment of the
waterfront area in Tokyo by using a five meter horizontal mesh
resolution..... 615
- Dandou Aggeliki, Tombrou Maria, Schäfer Klaus, Emeis Stefan,
Soulakellis Nikolaos, Protonotariou Anna, Bossoili Elissavet,
Suppan Peter**
A comparison between modelled and measured mixing layer heights
over Europe..... 619
- Ferreira Daniele Gomes, Assis Eleonora Sad.**
Natural ventilation in urban areas: the case of Belo Horizonte city,
Brazil..... 623
- Jiang Weimei, Chen Yan, He Xiaofeng, Liu Gang**
Study on the impact of anthropogenic heat on urban boundary
layer properties..... 627
- Järvi Leena, Vesala Timo, Rinne Janne, Sogachev Andrey**
Results on flux tower and profile measurements in Helsinki..... 631

Kallistratova Margarita, Yushkov Vladislav	
An experience of wind velocity profile measurements by SODAR in the noisy urban area.....	635
Kiyota Tadashi, Kiyota Nobuyoshi, Taniguchi Akira, Nakamura Hiroyasu	
Observation research on the effect to the heat island countermeasure with the land and sea breeze of the coast city. Part 2 The research on the effect of the earth surface of the covering on the city temperature.....	639
Linden Elisabet, Sandberg Mats, Westerberg Ulla	
Wind field in an urban space explored by different methods.....	643
Silviera Simone Queiroz, Assis Eleonora Sad	
Urban Ventilation in the City of Belo Horizonte, Brazil.....	647
Taniguchi Akira, Kiyota Nobuyoshi, Kiyota Tadashi, Nakamura Yasuhiro	
Observation research on the effect to the heat island relaxation with the land and sea breeze of the coast city. Part 3 The research on the effect of the river of the cooling effect on the city temperature.....	651
 Poster Session B	
Andrade Henrique	
Day-time variation of microclimatic conditions in a residential city-district of Lisbon (Portugal).....	655
Andrade Henrique, Vieira Rute	
Local and microclimatic differentiation of an urban green space of Lisbon (Portugal).....	659
Assis Eleonora S.	
Urban climate applications on city planning: reviewing the Brazilian studies.....	663
Brandt Karsten	
Heatwave forecasting with an coupled air-building model.....	667
Brandt Karsten	
Using thermal fingerprints to recommend rambling tracks in the Siebengebirge/Germany.....	671
Eichhorn Joachim, Borrmann Stephan, Panhans Walter-Georg, Reinert Daniel, Wirth Volkmar, Zand Ahmed Niapur	
Application of meso- and microscale flow models to the region of Tehran (Iran).....	675
Hasegawa Tomoko, Nakao Masaki, Nabeshima Minako, Nishioka Masatoshi	
Mobile measurement method of urban thermal environment.....	677

Ichinose Toshiaki, Kataoka Kumi Mitigation of thermal environment by a special paving material, Katsuren Travertine.....	681
Ketzler Gunnar, Schneider Christoph, Havlik Dieter, Peschel Gerhard Analysis of urban climate and detection of urban climate change in the city of Aachen over a 30-year period – Temperature variation and trends in complex terrain.....	685
Kim Yeon-Hee, Ryou Sang-Boom, Baik Jong-Jin, Koo Hae-Jung, Kwon Tae-Hyeon, Park Il-Soo Urban climate changes by the restoration of Cheonggye stream in Seoul, Korea.....	689
Martin Claire, Longley Ian, Gallagher Martin Particle number emission fluxes measured above the urban canopy of central Manchester.....	692
Moniaci Walter Data mining system for PM10 nowcasting.....	697
Nabeshima Minako, Kozaki Yasuaki, Nakao Masaki, Nishioka Masatoshi Air Temperature Distribution in Osaka, Japan.....	701
Osrodka Leszek, Osrodka Leszek, Krajny Ewa, Wojtylak Marek, Klejnowski Krzysztof, Dunal Rafal Short-range air pollution forecasting as component of decision support system in Environment Management.....	705
Trusilova Kristina, Churkina Galina, Karstens Ute, Heimann Martin, Claussen Martin Modeling of urbanization impacts on the climate in Europe in 2000-2005: Numerical experiments by and coupled mesoscale model and Town Energy Balance model.....	709
Vesala Timo, Järvi Leena, Rinne Janne, Sogachev Andrei, Kulmala Markku, Nikinmaa Eero, Hillamo Risto Measurements of atmospheric processes and atmosphere-surface interactions at SMEAR III site, Helsinki.....	713
Wolf Uta, Schultz Eckart, Endlicher Wilfried Assessment of air quality on basis of fine (PM 2.5) and coarse particle measurement in rural and urban areas.....	716
Yoshida Atsumasa, Kazuo Tanabe, Shin-ichi Kinoshita Development of field measurement system for evaluation of heat transfer in complex outdoor space.....	720

Poster Session C

- Anischenko Victor, Yushkov Vladislav, Tarasova Oksana**
On the semi-empiric relations between characteristics of turbulent diffusion and some parameters measured by sodar in the Planetary Boundary Layer..... 724
- Blazejczyk Krzysztof, Adamczyk Anna Beata**
Spatial differentiation in active surface temperature in Warsaw..... 728
- Buske Daniela, Vilhena Marco Túllio, Moreira Davidson Martins, Tirabassi Tiziano**
The GILTT time-dependent two-dimensional advection-diffusion equation for the pollutant dispersion simulation in atmosphere..... 732
- Drebs Achim, Vajda Andrea**
Air temperature gradient studies in Helsinki Metropolitan Area during 2002 – 2005..... 736
- Grawe David**
Application of an obstacle resolving numerical model for an urban area in London, UK..... 739
- Hamada Takashi, Ichinose Toshiaki, Tanaka Hiroharu, Mikami Takehiko**
Effect of mountain wind on urban heat island in Nagano, Japan..... 743
- Hamdi R, Schayes G**
Improving the Martillis urban boundary layer scheme: off-line validation over different urban surfaces..... 747
- Junk Jürgen, Helbig Alfred**
The influence of meteorological parameters on the daily PM10 concentrations..... 751
- Kern Aniko, Gyorgyi Gelybo, Zoltan Barcza, Judit Bartholy, Rita Pongracz**
Study of the urban environment based on atmospheric profiles measured by polar orbiting satellites..... 755
- Kiokakis Lazaros, Charalampopoulos Ioannis, Kannavou Anastasia, Chronopoulou-Sereli Aikaterini**
The influence of the sea and of several land uses on the topoclimate of Glyfada Municipality, Athens, Greece 759
- Langner Marcel, Meurer Manfred**
Influence of meteorological conditions on PM10 and PM2.5 particle concentrations on a roadside urban green..... 763
- Pawlak Włodzimierz**
Daily and annual variability of effective albedo of urban area - Lodz case study..... 766

Rigo Gergely, Parlow Eberhard	
Energy Flux densities with remote sensing and in situ data in an urban environment	770
Steinberga Iveta, Lizuma Lita, Eindorfa Aiva	
An empirical analysis of the relationship between meteorological parameters and urban air pollution.....	774
Sundberg Jenny, Pihl Karlsson Gunilla, Pleijel Håkan	
NO, NO ₂ and O ₃ concentrations at a rooftop urban monitoring site in comparison with the polluted urban landscape and a rural site - influence of wind speed and temperature.....	777
Yamashita Takuhiro, Tanaka Takahiro, Moriyama Masakazu, Sagawa Tomoko	
Analysis of summer radiative temperature for district planning, using aerial thermal image and GIS technique.....	781
Yushkov Vladislav	
Practice sodar for ecological education.....	786
Poster Session D	
Amirtham Lilly Rose, Dr.M.D. Devadas	
Changing urban structure and its impact on the urban micro climate - A case study of Chennai city.....	790
Blazejczyk Krzysztof, Wieclaw Mirosław, Bakowska Monika	
Urban heat island in large and small cities.....	794
Bonacquisti Valerio, Casale Giuseppe Rocco, Palmieri Sabino, Siani Anna Maria	
A canopy layer model to describe the Urban Heat Island in Rome....	798
Charalampopoulos Ioannis, Kiokakis Lazaros, Chronopoulou - Sereli Aikaterini, Kannavou Anastasia	
Bioclimatic performance of several sites which differ on their green coverage in Athens, Greece.....	802
Dezso Zsuzsanna, Judit Bartholy, Rita Pongracz	
Urban heat island analysis using MODIS and ASTER measurements for Central European large cities.....	806
Hara Yoshio, Autio Jyrki	
Heat island intensity at high latitude city -an example from Oulu, Central Finland.....	810
Helbig Alfred, Junk Jürgen	
How meteorological parameters and air pollution, especially PM ₁₀ concentrations, influence the daily mortality rates between 2000 and 2005 - an example from Western Europe.....	814
Kaneko Tomoya, Horikoshi Tetsumi, Hashimoto Tsuyoshi, Suzuki Kenji	
Observations of urban climate in Yonago, Japan.....	818

Kristóf Gergely, Weidinger Tamás, Bányai Tamás, Rácz Norbert Development of computational model for urban heat island convection using general purpose CFD solver.....	822
Miller James The bioclimatic environment of a rapidly expanding desert metropolis.....	826
Moreno García M^a Carmen, Martín-Vide Javier, López-Bustins Joan-Albert, Raso José M. Urban heat island intensity in Barcelona and the Western Mediterranean Oscillation.....	830
Moreno García M^a Carmen, Sánchez-Lorenzo Arturo, Azorín-Molina César, Martín-Vide Javier, Calbó Josep Weekly variation in the low cloud cover and frequency of cloud-type series in Spanish cities.....	834
Müller Marlén, Matzarakis Andreas, Endlicher Wilfried Heat stress in Berlin (Germany).....	838
Pagenkopf Anja The spatiotemporal structure of precipitation in Berlin and its surroundings between 1951 and 1990.....	842
Pisoni Enrico, Gómez Igor, Pastor Francisco Neural network SST NOAA/AVHRR reconstruction for use in prognostic meteorological model.....	846
Podstawczyńska Agnieszka Sensible thermal conditions in urban and rural area.....	850
Rzepa Marcin Variability of sky view factor in the street canyon in the center of Łódź.....	854
Sun Chen-Yi, Lin Hsien-Te An application of ASTER and FORMOSAT-2 data to the study of Urban Heat Island in subtropical Taiwan.....	858
Sümeğhy Zoltan, Unger Janos, Balazs Bernadett, Gal Tamas Air humidity distribution along a representative urban cross-section in Szeged, Hungary.....	863
Thorsson Sofia, Lindberg Fredrik, Eliasson Ingegärd Measurements of mean radiant temperature in different urban structures.....	867
Yamashita Shuji, Yamazoe Yuzuru, Tsuji Tadayasu Learning study of heat island phenomena at GLOBE program of Japan.....	871
Yoshida Atsumasa, Moriyama Masato, Gonsui Kazuma, Murakami Hiroki Measurement on thermal environment in Osaka area, Japan and mitigation trial by use of membrane material for construction.....	874

Yoshida Atsumasa, Yamaguchi Kohei, Gonsui Kazuma, Fukumori Kohei Mitigation of heat island by use of transpiration from green cover and water-retentive ceramic material.....	878
Zaninovic Ksenija, Matzarakis Andreas Thermal sensation in different meteorological situations in town centre and suburbs.....	882