

CONFERENCE REGISTRATION AND WELCOME COFFEE

8h30 - 9h30

OPENING SESSION

9H30 - 10H30

Why Urban Physics and Why in Ecuador

Benoit Beckers¹

¹ Architecture and Urban Physics
Department of Building And Public Works (ISA BTP)
Université de Pau et des Pays de l'Adour
Allée du Parc Montaury
64600 Anglet
France

PLENARY SESSION

10H30 - 11H30

Object-Oriented Approach to Urban Canyon Analysis

Timofey E. Samsonov¹, Pavel I. Konstantinov², Mikhail I. Varentsov²

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WELCOME SPEECH BY PONTIFICIA UNIVERSIDAD CATOLICA DEL ECUADOR (PUCE) AND UNITED NATIONS DEVELOPMENT PROGRAM (UNDP)

11h30 - 12h00

LUNCH

12h00 - 13h00

SESSION 1: MASSIVE 3D MODELS AND PHYSICAL DATA

13H00 - 14H30

Sparse Matrix Solution for Computing Urban Radiation Exchange

José Pedro Aguerre¹, Eduardo Fernández¹, Gonzalo Besuievsky², and Benoit Beckers³

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Skyline-control Based LoD Generation for Solar Analysis in 3D Cities

Gonzalo Besuievsky¹, Benoit Beckers², and Gustavo Patow¹

¹Geometry and Graphics Group, University of Girona, Spain
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A robust smoothed voxel representation for the generation of finite element models for computational urban physics

Alain Rassinoux¹, Benoit Beckers¹

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SESSION 2: LOCAL OBSERVATIONS AND REMOTE SENSING

14H30 - 15H00

Heat stress in urban area: data fusion of observations, modeling and geospatial information

L. Pinson¹ and V. Masson²

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COFFEE BREAK

15h00 - 15h30

SESSION 2: LOCAL OBSERVATIONS AND REMOTE SENSING

15h30 - 16h30

Historical Urban Landscape as a Descriptive Feature for Risk Assessment: the 'Quebradas' of Quito

Sheika M. Aragundi¹, Alexandra P. Mena^{1, 2}, and Jenny J. Zamora¹

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Impact of the anisotropy of the sky vault emissivity on the building envelope radiative budget

R. Nahon¹, O. Blanpain¹, and B. Beckers²

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WELCOMING EVENT

17H30 - 18H00

FACULTY OF ARCHITECTURE, DESIGN AND ARTS

End Day 1

PLENARY SESSION

9h00 - 10h00

Urban Climate, Human behavior & Energy consumption: from LCZ mapping to simulation and urban planning (the MAPUCE project)

V. Masson¹, J. Hidalgo², A. Amossé⁵, E. Bocher⁷, M. Bonhomme⁵, A. Bourgeois⁸, G. Bretagne³, S. Caillerez³, E. Cordeau³, C. Demazeux⁴, S. Faraut⁵, C. Gallato³, S. Haoues-Jouve², M.-L. Lambert⁴, A. Lemonsu¹, J.-P. Lévy⁸, N. Long⁶, C.-X. Lopez², G. Petit⁷, M. Pellegrino⁹, C. Pignon⁶, C. Plumejeaud⁶, V. Ruff³, R. Schoetter¹, N. Tornay⁵, D. Vye⁶

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⁵ Laboratory of Research in Architecture, Toulouse, France

⁶ Laboratory on coastal environment and society, La Rochelle, France

⁷ Laboratory on Sciences of Information Transfer and Communications, Lorient, France

⁸ Laboratory on technics, territories and societies, Univ. of Paris-East, Marne-La-Vallée, France

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SESSION 3: ENVIRONMENTAL PHYSICS AND URBAN CLIMATE

10h00 - 10h30

Environmental quality at district scale: A transdisciplinary approach within the EUREQUA project

Gauvreau B.¹, Guillaume G.¹, Can A.¹, Gaudio N.², Lebras J.², Lemonsu A.², Masson V.², Carissimo B.³, Richard I.⁴ and Haoues-Jouve S.⁵

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COFFEE BREAK

10h30 - 11h00

SESSION 3: ENVIRONMENTAL PHYSICS AND URBAN CLIMATE

11h00 - 11h30

Downburst Reconstruction using Physical Simulation and Analytical Model with Application to Urban Environments

Djordje Romanic¹, Dan Parvu¹, Horia Hangan¹

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SESSION 4: RENEWABLE ENERGIES AND SUSTAINABLE URBAN PLANNING

11h30 - 12h30

An Electrifying Change: The Need to Introduce Electric Vehicles in Ecuador, And Its Potential Impact on the Energy Sector

Davis, M.J.M.^{1,2}

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Pertinence of social inclusion design methods in communities

Enrique V. Villacis¹, María L. Rodríguez², Cynthia C. Ayarza², and Klaus Ruecker³

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LUNCH

12h30 - 13h30

SESSION 4: RENEWABLE ENERGIES AND SUSTAINABLE URBAN PLANNING

13h30 - 15h00

A study of solar access in Bogotá: the Las Nieves neighborhood

R. Franco¹, P. Bright¹, J Benítez¹, and B. Beckers²

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Impacts of Realistic Surface Heating on Outdoor Thermal Comfort

Negin Nazarian¹, Tiffany Sin², Leslie K. Norford³

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Estimating the Urban Heat Island Effect in the City of Guayaquil

Massimo Palme^{1,2}, Geovanna Villacreses², Andrea Lobato², Martín Cordovez², José

Macias^{2,3} and Guillermo Soriano³

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SITE VISIT PUCE NAYÓN

15H00 - 17H30

PUCE SMART CAMPUS OF NAYÓN

End Day 2

SESSION 4: RENEWABLE ENERGIES AND SUSTAINABLE URBAN PLANNING

9h00 - 10h30

Daylighting: an approach from urban to room scale*Bernard A. Paule¹ and Jérôme H. Kaempf²*

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Real-time material computation in architectural design: Experiments on the development of interactive form finding tools.*Seiichi Suzuki Erazo¹*

¹ Institute of Building Structures and Structural Design – University of Stuttgart
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Golden LEED Certification: Seymour Airport*Verónica Reed¹*

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COFFEE BREAK

10h30 - 11h00

SESSION 5: FINITE ELEMENT AND OTHER SIMULATION METHODS

11h00 - 12h30

Fast and accurate view factor generation*Benoit Beckers¹ and Pierre Beckers²*

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Towards reduced-order modeling of complex phenomena in urban physics*Piotr Breitkopf, Pierre Villon*

Laboratoire Roberval, UMR-T337 UTC-CNRS
Université de Technologie de Compiègne, France

Multiphysic Design of a Street Section*Catherine Knopf-Lenoir¹, David Muñoz², Raphaël Nahon³, Benoit Beckers¹*

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LUNCH

12h30 - 13h30

SESSION 5: FINITE ELEMENT AND OTHER SIMULATION METHODS

13h30 - 14h30

Numerical modeling of evaporative cooling using water spray systems for heat stress reduction in urban areas*H. Montazeri¹, Y. Toparlak^{2,3}, B. Blocken^{1,2} and J.L.M. Hensen²*

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³ Flemish Institute for Technological Research Mol, Belgium
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Computational analysis of an urban park's impact on the Antwerp microclimate*Yasin Toparlak^{1,2}, Bert Blocken^{1,3}, Bino Maiheu², GertJan van Heijst⁴*

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³ Department of Civil Engineering, KU Leuven, Leuven, Belgium
⁴ Department of Applied Physics, Eindhoven University of Technology Eindhoven, The Netherlands

COFFEE BREAK

14h30 - 15h00

SESSION 5: FINITE ELEMENT AND OTHER SIMULATION METHODS

15h00 - 16h00

Periodic 3D model to optimize urban shapes for solar radiation*T. Vermeulen¹, C. Knopf-Lenoir², L. Merino¹, P. Villon², and B. Beckers²*

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Application of Large-Eddy Simulations in Evaluating Ventilation over 3D Building Data Retrieved from Satellite Images*Weiwen Wang¹, Yong Xu², and Edward Ng³*

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VISIT

17h30 - 19h30

Quito Historical Center**End Day 3**

Day 4

FICUP 2016
GALAPAGOS

TRANSFER
QUITO - BALTRA

VISIT
12H00 - 13H00
ECOLOGICAL AIRPORT OF BALTRA, WIND TURBINES

LUNCH
13h00 - 14h00

TRANSFER
14H00 - 16H00
BALTRA - PUERTO AYORA

End Day 4

SESSION GALAPAGOS

9h00 - 11h00

Energy Strategies towards a Fully Sustainable Galapagos Archipelago
Pedro Calle¹, Siebe Broersma²,
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From Theory to Practice: Building Physics in Urban Design
John Martin Evans¹ and Silvia de Schiller²
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**To evaluate the sustainability of urban planning projects through an LCA approach:
 example of application of the NEST tool and requirements for its use in the context of
 Ecuador and Latin America**
Nicolas Salmon^{1,2}, Grace Yopez-Salmon^{1,2,3}, Marc Lotteau^{4,5}*
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⁵ University of Bordeaux, ISM, UMR 5255, 351 Cours de la Libération, 33400 Talence, France

**Radiative Performance Assessment of Two Roofs in Mediterranean and Equatorial
 Climates.**
J. Torres-Quezada¹, A. Pages-Ramon², H. Coch³ and A. Isalgué⁴
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COFFEE BREAK

11h00 - 11h30

SESSION GALAPAGOS

11h30 - 12h30

Solar Cooling in the Ecuadorian Contexts
María A. Sanchez del Hierro¹, Jairo Acuña², Tannya K. Pico³, Jorge D. Czajkowski⁴
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Climate Comparison In The Urban Areas Of The Oyambaro And Quito Valleys
Jimenez, Sylvia¹; Van Sluys, Christine¹
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INVITED SPEAKERS

12h30 - 13h30

Elisa Moran / Robert Balfour
Monica Calvopiña / Cristina Calvopiña

LUNCH

13h30 - 15h00

SESSION GALAPAGOS

15h00 - 16h30

Sustainable Construction in Galapagos: The case of Seymour Airport
Tannya K. Pico¹
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**Sky Access versus Shading for Pedestrian Comfort in the Hot Tropical Climate of
 Jeddah**
BadiaMasoud¹, BenoitBeckers², and HelenaCoch³
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Conclusion and Closing Session
Benoit Beckers¹, Tannya K. Pico², Sylvia Jimenez²
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VISIT

16H30 - 18H00

CHARLES DARWING FOUNDATION
End Day 5