Personal information

Family name:	Ghiaus
Given name:	Christian
Birth:	29 June 1959, Bucharest, Romania
Nationalities:	Romanian and French
Position:	Professor
Institution:	INSA Lyon
	CETHIL Centre for thermal sciences of Lyon
	Bât. Sadi Carnot, 9 rue de la physique
	69621 Villeurbanne cedex
	France
E-mail:	christian.ghiaus@insa-lyon.fr
Mobile phone:	00 33 6 04 09 26 47

Education and degrees

2006	**Habilitation to direct PhD research (HDR)**, Univerisité de La Rochelle, France *Thesis*: Adaptive buildings – control of mass and heat transfer
1991-1996	**PhD**, Technical University of Civil Engineering (UTCB), Bucharest, Romania *Thesis*: Numerical and expert control of energy in building
1988	**Control Systems Analyst**, National Institute for R&D in Information Technology (ICI), Bucharest, Romania
1979-1984	**Engineer**, Technical University of Civil Engineering (UTCB), Bucharest

Fellowships and research grants

1998-2000	**Post Doctoral Fellowship**, at University of La Rochelle, France
1997-1998	**Fulbright Senior Research Award**, Kansas State University, United States
1994-1995	**Doctoral Research Grant** NUFFIC (Netherlands organisation for international cooperation in higher education), Technische Universiteit Delft, The Netherlands

Professional experience

since 2007 — **Full Professor, Thermal Sciences Research Centre (CETHIL) and Civil Engineering Department (CGU), National Institute of Applied Sciences (INSA) Lyon, France**

Teaching: Mass and heat transfer, Air conditioning, Energy and buildings

Research: Low energy buildings design and performance evaluation, Inverse problems (parameters optimisation and control)

Coordinator of the scientific field Energy and buildings (3 Professors, 1 Emeritus Professor, 5 Associated Professors, about 20 PhD students)

International projects

International Energy Agency (IEA)

2004-2009 Annex 53: Total Energy Use in Buildings-Analysis and evaluation methods

2011-2015 Annex 58: Reliable Building Energy Performance Characterisation Based on Full Scale Dynamic Measurements

2012-2017 Annex 60: New generation computational tools for building and community energy systems based on the Modelica and Functional Mockup Interface standards

National projects

2007-2010 MIGRER Intelligent buildings and rational management of renewables

2008-2011 ABCLIMSOL Performance evaluation and optimisation of solar absorption air conditioners

2009-2011 4C Cooling without air conditioning

2010-2013 AIDE-3D Fault Detection and Diagnosis of Building Energy Systems

2012-2015 POUDEV Energy use policies in urban environment

2013-2015 IDEFFE Estimation of use and data aggregation of energy in buildings

2014-2018 COMETE Cloud for intelligent buildings and energy efficiency

1998-2007   Senior researcher, University of La Rochelle, France
Laboratory of Transport Phenomena in Buildings (LEPTAB)
Research
International projects
European Commission
- 2004-2006 *European Low Energy Buildings*, project SAVE EIE/04/172/S07.38667, 1'562'112€
- 2003-2005 *Smart Accelerate- Acceleration of Smart Buildings Technologies and Market Penetration*, project SAVE 4.1031/Z/02-094, €610'167
- 2001-2003 *URBVENT Natural ventilation in urban areas*, project NNE5-2000-00238 €1'003'429, project coordiantor
- 1999-2002 *SOLVENT Strategies for the efficient use of solar and passive ventilation in urban buildings,* project ALTENER XVII/4.1030/Z/99-225

International Energy Agency (IEA)
- 2004-2009 Annex 44: *Integrating Environmentally Responsive Elements in Buildings*
- 1997-1999 Annex 34: *Computer-Aided Evaluation of HVAC System Performance: The Practical Application of Fault Detection and Diagnosis Techniques in Real Buildings*

National projects
- 2000-2003 *Influence of atmospheric pollution on the global exposure of schoolchildren -- Research of prediction and means for protection*
- 1999-2000 *Ozone picks prediction by using neuro-fuzzy*

Teaching
Graduate School: Master of Science in Building Services Engineering and Built Environment
- 2001 *Participation in the foundation of two Master Programmes:*
  - *Building Management Systems*
  - *Renewables in Built Environment*
- 2001-2007 *Master Programme* **Building Management Systems***: Energy Efficiency through Control*
- 2001-2007 *Master Programme* **Renewables in Built Environment** *Aero-thermal modelling*

1997-1998   Fulbright Senior Research Fellow, Kansas State University, United States
Department of Mechanical and Nuclear Engineering, Institute for Environmental Research
Post-doctoral research Intelligent buildings: fault detection and diagnosis of energy systems

1994-1995   Researcher, Technische Universiteit Delft, The Netherlands
Mechanical Engineering Faculty, Energy Technology Laboratory
Doctoral research Intelligent control of indoor climate

1989-1997   Technical University of Civil Engineering, Bucharest, Romania
Building Services Faculty
Since 1996   **Associated Professor**
1993-1996   **Lecturer**
1989-1993   **Assistant Professor**
Teaching and research in *Building Services Engineering*
Director of the 1st Romanian *CAD Training Centre*
Chief of the *Building Energy Management Systems Laboratory*

1987-1989   Research Institute for Industry, Bucharest, Romania
Department of Automatic Control
Design Engineer Engineered building automation projects in Romania, Germany, China, and Zimbabwe.

1984-1986   Frigotehnica (*Refrigerating Engineering company*), **Bucharest, Romania**
Engineer Supervised on-site installing of refrigerating systems.

PhD and scientific responsabilities

since 2008   **Coordinator of the scietific research group: theory of thermal systems**

PhD Director at INSA Lyon, France

2007-2011   N. Jabbour, *Optimisation of solar absorption air-conditioners*
2008-2011   I. Hazyuk, *Control of multiple energy sources*
2009-2013   R. Ghazal, *Optimization of dessicant cooling systems*
2012-2015   M. Muresan, *Knowledge models for optimal control of heat and mass transfer in buildings*
2012-2015   E. Arik, *Politics and uses of energy in cities*
2012-2016   I. Naveros, *Measurability of physical parameters of dynamic systems*
2014-2017   L. Raillon, *Experimental identification of physical parameters of buildings*
2014-2018   L. Negrea, *Contributions to the reduction of energy consumption in buildings by using artificial intelligence*

Cotutoring of PhD thesis, University of La Rochelle, France

2001-2003   V. Iordache. *Outside-inside pollutant transfer*
2003-2006   A. Chicinas. *Intelligent control of air-conditioning systems*
2003-2007   A. Sempey. *Fast dynamic modelling of air flow in buildings*
2005-2008   I. Jaffal. *Simulation-based design of low energy buildings*

Management activities

Project management

2016-2017   **Analysis of energy performance method QUB** – project coordinator
€60'000 (Saint Gobain Reseach financing)

2016-2017   **Physical Big Data: Physical analysis of massive big data on energy consumption** – project coordinator
€30'000 (COOPERA Rhone-Alpes Region financing)

2014-2018   **COMETE Cloud for Intelligent Home and Energy Efficiency –** coordination of subtask Thermal models obtained by measurement-adjusted parameters
€102'470 from which €57'000 for CETHIL (ANR Labex IMU financing)

2013-2015   **IDeffE Estimation of energy usage and data agregation by experimental identification** – project coordination
€1'082'834 (ANR support €455'298) from which €283'684 (ANR support €95'680) for CETHIL

2010-2013   **AIDE-3D Fault Detection and Diagnosis of Building Energy Systems** – coordination of task 2 Preditif model for energy consumption
€1'082'834 (ANR support €455'298) from which €283'684 (ANR support €95'680) for CETHIL

2008-2011   **ABCLIMSOL Performance evaluation and optimisation of solar absorption air conditioners** – coordiantion of task 3 Optimisation of absorption systems
€603'822 (ANR support €307'679) from which €148'400 (ANR support €74'200) for CETHIL

2009-2011   **4C Cooling without air conditioning** – coordination of task 4 Control algorithm
€1'619'592 (ANR support €909'649) from which €231'233 (ANR support €152'880) for CETHIL

2007-2010   **MIGRER Intelligent buildings and rational management of renewables –** coordination of tasks 4 and 5: Controller design, implementation and validation
€546'741 from which €187'816 (ANR support €126'880) for CETHIL

2004-2009   **Annex 53: Total Energy Use in Buildings-Analysis and evaluation methods** – coordination of subtask 3: Statistical Methods
w/o financing, about 8 organisation, 12 persons

2000-2004   **URBVENT Natural ventilation in urban areas - Potential assessment and optimal facade design**, contract NNE5-2000-00238 financed in the 5th Framework Programme
€1'003'429, 9 organisations, 15 persons

1999-2002   **Influence of atmospheric pollution on the global exposure of schoolchildren -- Research of prediction and means for protection** (*Etude de l'impact de la pollution atmosphérique sur l'exposition des enfants en milieu scolaire – Recherche de moyens de prédiction et de protection*), Convention no. 99.04.054 between ADEME and the University

of La Rochelle in the framework of the *Research National Programme for a better Quality of Air at Local Scale* (*Programme de Recherche Interorganisme pour une Meilleure Qualité de l'Air à l'Echelle Locale* PRIMEQUAL-PREDIT).
€250'000, 2 organisations, 5 persons

1999-2000 **Ozone peaks prediction by using neuro-fuzzy networks** (*Développement d'un système de prévision des points de pollution par l'ozone sur l'agglomération Rochelaise à l'aide de réseaux de neurones et étude de l'influence océanique*), Convention no. 99.04.054 between the Association for Air Quality in Poitou-Charentes Region (Association régionale pour la mesure de la qualité de l'air en Poitou-Charentes- AREQUA) and the University of La Rochelle
€120'000, 2 organisations, 3 persons

1997-1998 **Computer aided design**, Grant 48 CNFIS-Romania, 25000 USD, financed by the World Bank
$25'000, 1 organisation, 5 persons

Elected representative

since 2016 Member of the **National Council of Reseach Ethics** of Romania
since 2009 **Member of the Council** of Civil Enginering Department of INSA Lyon
since 2008 **Member of the Council** of the Centre for Thermal Sciences of Lyon
2006-2007 **Member of the scientific council** of the Univeristy of La Rochelle
2004-2007 **Member of the Council** of the Laboratory of Transport Phenomena in Buildings, Univeristy of La Rochelle, France
1992-1998 **Scientific Secretary** of the Romania Society of Electrical and Control Engineers (SIEAR)
1991-1996 **Member of the Council of the Electrical Engineering Lab**, UTCB, Romania
1981-1984 **Vice-president with professional affairs of the student union**, UTCB, Romania

Member of scientific societies

since 2004 **Member of the Internalional Solar Energy Society** (ISES)
since 2010 **Member of American Society of Heating, Ventilation and Air-conditioning Engineers** (ASHRAE)

Administrative responsibilities

since 2010 **Coordinator of the Master on Energy Efficient Buildings,** INSA Lyon
2006-2007 **Coordinator of the Master on Energy Efficient Buildings** (I3ER), Université La Rochelle
1991-1997 **Chief of the Automatic Control Laboratory**, UTCB, Romania
1990-1996 **Director of the Computer Aided Design Centre**, UTCB, Romania
1984-1986 **Construction site coordination,** Figotehnica, Romania

Member of editorial board

since 2005 **Energy and Buildings**, Elsevier, 5-year impact factor 2.254
since 2010 **Central European Journal of Engineering**, Versita
since 2011 **Sustainable Cities and Society**, Elsevier
since 2012 **Building Performance Simulation**, Francis and Taylor

National and International Expert

since 2007 **French National Agency for Research (ANR)**
since 2011 **Romanian National Authority for Scientific Research (ANCS)**
since 2012 **Italian National agency for the Evaluation of Universities and Research (ANVUR-MIUR),**

Publications (see attached list)

Author h-index: 14 ISI-Web of Knowledge, 15 SCOPUS, 19 Google Scholar

31 ISI papers in international journals (Energy and Buildings, Buildings and Environment, Solar Energy, Energy, Applied Thermal Engineering, Atmospheric Environment, Journal of Ventilation, Control Engineering Practice)
11 chapters in edited books
47 papers published in the proceedings of international conferences

List of publications

1 Papers in ISI international journals

IF = journal impact ISI factor as of April 2015 (source: http://www.journal-data.com)

Paper	Journal Impact Factor
[RI 1] **C. Ghiaus,** F. Alzetto (2019) Design of experiments for Quick U-building method for building energy performance measurement, *Journal of Building Performance Simulation* 465-479 https://doi.org/10.1080/19401493.2018.1561753	3.110
[RI 2] L. Raillon, **C. Ghiaus** (2018) An efficient Bayesian experimental calibration of dynamic thermal models, *Energy* 152:818-833 https://doi.org/10.1016/j.energy.2018.03.168	5.537
[RI 3] L. Raillon, **C. Ghiaus** (2017). Study of error propagation in the transformations of dynamic thermal models of buildings, *Journal of Control Science and Engineering*, 2017:15 http://dx.doi.org/10.1155/2017/5636145	
[RI 4] T. Baracu, S. Costinas, **C. Ghiaus**, A. Badea, R. Avram, F. Vladulescu, D. Jugravescu (2016). New analytical methodologies for radiative heat transfer in enclosures based on matrix formalism and network analogy. *Applied Thermal Engineering,* 107 (2016) 1269-1286 http://dx.doi.org/10.1016/j.applthermaleng.2016.06.157	2.624
[RI 5] I. Naveros, **C. Ghiaus**, D.P. Ruiz, S. Castano (2015). Physical parameters identification of walls using ARX models obtained by deduction. *Energy and Buildings,* 108 (2015) 317-329 http://dx.doi.org/10.1016/j.enbuild.2015.09.021	2.465
[RI 6] I. Naveros I., **C. Ghiaus** (2015). Order selection of thermal models by frequency analysis of measurements for building energy efficiency estimation. *Applied Energy* 139 (2015) 230-244 http://dx.doi.org/10.1016/j.apenergy.2014.11.033	5.746
[RI 7] **C. Ghiaus** (2014). Linear algebra solution to psychometric analysis of air-conditioning systems. *Energy* 74:555-566 http://dx.doi.org/10.1016/j.energy.2014.07.021	4.159
[RI 8] I. Hazyuk, **C. Ghiaus**, D. Penhouet (2014). Model Predictive Control of thermal comfort as a benchmark for controller performance. *Automation in Construction* 43: 98-109 http://dx.doi.org/10.1016/j.autcon.2014.03.016	1.822
[RI 9] R. Ghazal, **C. Ghiaus** (2014). Gray-box identification of thermal transfer coefficients of desiccant wheels. *Energy and Buildings* 70: 384-397 http://dx.doi.org/10.1016/j.enbuild.2013.11.081	2.465
[RI 10] **C. Ghiaus** (2013). Causality issue in the heat balance method for calculating the design heating and cooling load. *Energy* 50: 292-301 http://dx.doi.org/10.1016/j.energy.2012.10.024	4.159
[RI 11] **C. Ghiaus**, R. Ghazal, P. Joubert, M.Y. Hayyani (2013). Gray-box state-space model and parameter identification of desicant wheels. *Applied Thermal Engineering*. 51:742-752 http://dx.doi.org/10.1016/j.applthermaleng.2012.10.016	2.624
[RI 12] I. Hazyuk, **C. Ghiaus**, D. Penhouet (2012). Optimal temperature control of intermittently heated buildings using Model Predictive Control: Part I – Building modeling. *Building and Environment*. 51: 379-387 http://dx.doi.org.scopeesprx.elsevier.com/10.1016/j.buildenv.2011.11.009	2.700
[RI 13] I. Hazyuk, **C. Ghiaus**, D. Penhouet (2012). Optimal temperature control of intermittently heated buildings using Model Predictive Control: Part II – Control algorithm. *Building and Environment*. 51: 388-394 http://dx.doi.org.scopeesprx.elsevier.com/10.1016/j.buildenv.2011.11.008	2.700
[RI 14] **C. Ghiaus**, N. Jabbour (2012). Optimization of multifunction multi-source solar	3.541

systems by design of experiments. *Solar Energy*, 86(1): 593-607

http://dx.doi.org.scopeesprx.elsevier.com/10.1016/j.solener.2011.11.002

[RI 15] C. Inard, J. Pfafferott, **C. Ghiaus** (2011). Free-running temperature and potential for free cooling by ventilation: A case study. *Energy and Buildings*, 43(10): 2705-2711   2.465

http://dx.doi.org/10.1016/j.enbuild.2011.06.017

[RI 16] **C. Ghiaus**, I. Hazyuk (2010). Calculation of optimal thermal load of intermittently heated buildings. *Energy and Buildings*, vol. 42(8), pp. 1248-1258   2.465

http://dx.doi.org/10.1016/j.enbuild.2010.02.017

[RI 18] I. Jaffal, C. Inard, **C. Ghiaus** (2009). Fast method to predict building heating demand based on the design of experiments. *Energy and Buildings*, 41(6): 669-677   2.465

http://dx.doi.org/10.1016/j.enbuild.2009.01.006

[RI 19] A. Sempey, C. Inard, **C. Ghiaus**, C. Allery (2009). Fast simulation of temperature distribution in air conditioned rooms by using proper orthogonal decomposition, *Building and Environment,* 44(2): 280-289   2.700

http://dx.doi.org/10.1016/j.buildenv.2008.03.004

[RI 20] A. Sempey, C. Inard, **C. Ghiaus**, C. Allery (2008). A state space model for real-time control of the temperature in indoor space – principle, calibration and resulsts. Internationl Journal of Ventialtion. (6)4 :327-336   0.303

http://www.ijovent.org.uk/IJV%20Vol%206/IJV%20V6%20No%204/IJV%20Abstracts%20Vol%206%20No%204%20Paper%204.htm

[RI 21] **C. Ghiaus**, A. Chicinas, C. Inard (2007). Grey-box identification of air-handling unit elements. *Control Engineering Practice*. 15(4), 421-433   1.912

http://dx.doi.org/10.1016/j.conengprac.2006.08.005

[RI 22] R. Belarbi, **C. Ghiaus**, F. Allard (2006). Modeling of water spray evaporation: Application to passive cooling of buildings. *Solar Energy*, 80(12), 1540-1552   3.541

http://dx.doi.org/10.1016/j.solener.2006.01.004

[RI 23] **C. Ghiaus** (2006). Experimental estimation of building energy performance by robust regression. *Energy and Buildings*, 38(6), 582-587   2.465

http://dx.doi.org/10.1016/j.enbuild.2005.08.014

[RI 24] **C. Ghiaus**, F. Allard (2006). Potential for free-cooling by ventilation. *Solar Energy*, 80(4), 402-413   3.541

http://dx.doi.org/10.1016/j.solener.2005.05.01

[RI 25] **C. Ghiaus**, F. Allard, M. Santamouris, C. Georgakis and F. Nicol (2006). Urban environment influence on natural ventilation potential, *Building and Environment*, 41(4), 395-406   2.700

http://dx.doi.org/10.1016/j.buildenv.2005.02.003

[RI 26] **C. Ghiaus** (2005)**.** Linear fuzzy-discriminant analysis applied to forecast ozone concentration classes in sea-breeze regime, *Atmospheric Environment*, 39(26), pp. 4691-4702   3.062

http://dx.doi.org/10.1016/j.atmosenv.2005.04.012

[RI 27] M. Germano, **C. Ghiaus**, C.-A. Roulet, and F. Allard (2005). Natural ventilation potential of urban buildings, *International Journal of Ventilation*, vol. 4(1), 49-56   0.303

[RI 28] **C. Ghiaus** (2003). Free-running building temperature and HVAC climatic suitability, *Energy and Buildings*, 35 (4), 405 – 411   2.465

http://dx.doi.org/10.1016/S0378-7788(02)00110-X

[RI 29] **C. Ghiaus**, R. Belarbi, F. Allard (2002). Optimal settings of residential oil burners, *Energy and Buildings*, 34 (1), 83-90   2.465

http://dx.doi.org/10.1016/S0378-7788(01)00082-2

[RI 30] **C. Ghiaus** (2001). Fuzzy model and control of a fan-coil, *Energy and Buildings*, 33 (6), 545-551   2.465

http://dx.doi.org/10.1016/S0378-7788(00)00097-9

[RI 31] **C. Ghiaus**, F. Allard (2001). Fuzzy schedule control of a fan-coil, *Solar Energy*, 21, 131-145   3.541

[RI 32] **C. Ghiaus** (1999). Fault diagnosis of refrigerating systems using qualitative bond graphs, *Energy and Buildings*, 30(3), 221-232   2.465

http://dx.doi.org/10.1016/S0378-7788(98)00070-X

[RI 33] **C. Ghiaus**, A.G. Ghiaus (1999). Evaluation of the indoor temperature field using a   2.700

given air velocity distribution, *Buildings and Environment*, 34(6), 671-679
http://dx.doi.org/10.1016/S0360-1323(98)00051-1

2   Chapters in edited books

[OI 1]   A. Nassioupoulos, **C. Ghiaus** (2013). Méthodes inverses et identification de modèles. in B. Peuportier (ed.) Livre blanc sur les recherches en énergétique des bâtiments, Presses des MINES – TRANSVALOR, pp. 177- 181.

[OI 2]   F. Allard, **C. Ghiaus**, A. Szucs (2010). Natural Ventialtion in High-Density Cities, in E. Ng (ed.), Designing High-Density Cities for Social and Environmental Sustainability, ISBN 978 1 84407 460 0, Earthscan Publications Ltd. pp. 137-162 (ref.)

[OI 3]   F. Allard, **C. Ghiaus** (2006). Natural ventilation in the urban environment, in M. Santamouris, P. Wouters (ed.), Building Ventilation – the state of the art, Earthscan, ISBN 1844071308, pp. 1-35

[OI 4]   **C. Ghiaus**, F. Allard (2005). Physics of natural ventilation, in C. Ghiaus, F. Allard (ed.), *Natural ventilation in urban environment*, Earthscan, UK USA, ISBN 1-84407-129-4, pp. 36-80

[OI 5]   **C. Ghiaus**, V. Iordache, F. Allard, P. Blondeau (2005). Outdoor-indoor pollutant transfer, in C. Ghiaus, F. Allard (ed.), *Natural ventilation in the urban environment*, Earthscan, UK USA, ISBN 1-84407-129-4, pp. 124-135

[OI 6]   C.-A. Roulet, **C. Ghiaus** (2005) Specific devices for natural ventilation, in C. Ghiaus, F. Allard (ed.), *Natural ventilation in the urban environment*, Earthscan, UK USA, ISBN 1-84407-129-4, pp. 158-167

[OI 7]   **C. Ghiaus**, C.-A. Roulet (2005), Strategies for natural ventilation, in C. Ghiaus, F. Allard (ed.), *Natural ventilation in the urban environment*, Earthscan, UK USA, ISBN 1-84407-129-4, pp. 136-157

[OI 8]   M. Germano, **C. Ghiaus**, C.-A. Roulet (2005). Natural ventilation potential, in C. Ghiaus, F. Allard (ed.), *Natural ventilation in the urban environment*, Earthscan, UK USA, ISBN 1-84407-129-4, pp. 195-226

[OI 9]   **C. Ghiaus**, L. Roche (2005). Whole life costing of ventilation options, in C. Ghiaus, F. Allard (ed.), *Natural ventilation in urban environment*, Earthscan, UK USA, ISBN 1-84407-129-4, pp. 227-235

[OI 10]   **C. Ghiaus,** J. Axley, C.-A. Roulet (2004). Natural ventilation: principles, solutions and tools. *Summer Academy for Mediterranean Solar Architecture*. ISES Italia, Rome August 2004, pp. 1-25

[OI 11]   **C. Ghiaus,** C. Inard (2004). Energy and environment issues of smart buildings. Handbook of Intelligent Buildings. NKUA, Greece, pp. 26-52

[OI 12]   **C. Ghiaus**, F. Allard, J. Axley (2003). Natural ventilation in urban areas. *Solar Thermal Technology for Buildings: State of the Art and Future Priorities*. Editor M. Santamouris. James & James, London, UK, ISBN 1 902916 47 6. pp. 116-138.

3   Scientific books

[OS 1]   **C. Ghiaus**, F. Allard, eds.(2005). *Natural Ventilation in the Urban Environment* ISBN 1844071294, Earthscan, London, UK

[OS 2]   **C. Ghiaus**, N. Postavaru (2001). Le management intégré avec des systèmes informationnels. Matrix, Bucarest, Roumanie. ISBN 976852636

4   Proceedings of international congresses

[CI 1]   Naveros I., **Ghiaus C.** (2014). Dynamic heat transfer in buildings: selecting a reduced order model. 45th International HVAC&R Congress. 3-5 Dec 2014. Belgrade, Serbia.

[CI 2]   Naveros I., **Ghiaus C.** (2014). Dynamic heat transfer in walls: limitations of heat fluc meters. 45th International HVAC&R Congress. 3-5 Dec 2014. Belgrade, Serbia.

[CI 3]   **C. Ghiaus**, J.-J. Roux (2013). Is it reasonable to calculate the thermal peak load using acausal models and short time steps?. In Proceedings of *Building Simulation 2013*, 25-28 August, Chambery, France, pp. 2118-2124

[CI 4]   I. Hazyuk, **C. Ghiaus**, D. Penhouet (2011). Optimal simulation of intermittently heated buildings: Part I – modeling. In Proceedings of *Building Simulation 2011*, 14-16 November 2011, Sydney, Australia, pp. 2118-2124

[CI 5]   I. Hazyuk, **C. Ghiaus**, D. Penhouet (2010). Optimal simulation of intermittently heated buildings: Part II – Control. In Proceedings of *Building Simulation 2011*, 14-16 November 2011, Sydney, Australia, pp. 2133-2139

[CI 6]   I. Hazyuk, **C. Ghiaus** (2010). On the physical meaning of minimization criterion for Model Predictive Control. In Proceedings of 2010 IEEE International Conference on *Automation, Quality and Testing, Robotics (AQTR 2010)*, 28-30 May 2010, Cluj-Napoca, Romania, pp. 32-37

[CI 7]   N. Jabbour, **C. Ghiaus** (2010). Simulation Aided Design of Multi-Source, Multifunction Solar Systems, Multifunctional Approach: Space Heating, Space Cooling and Preparation of Domestic Hot Water. CLIMA 2010 10th REHVA World Congress, 9- 12 may, Antalya, Turquie, CD ROM R4-TS28-OP01

[CI 8]   N. Jabbour, **C. Ghiaus** (2010). Optimization by Simulation of a Multi-Source, Multifunction Solar System, Multifunctional Approach: Space Heating, Space Cooling and Preparation of Domestic Hot Water. CLIMA 2010 10th REHVA World Congress, 9- 12 may, Antalya, Turquie, CD ROM R4-TS28-OP02

[CI 9]   I. Hazyuk, **C. Ghiaus** (2010). A method of heating systems sizing for discontinuously occupied buildings. *10th REHVA world congress (Clima 2010)*, 9-12 May 2010, Antalya, Turkey.

[CI 10] **C. Ghiaus**, I. Hazyuk (2009). Sizing the heat source in variable occupied buildings by using the dynamic matrix method. 40th International *HVAC Congress*, 2-4 December 2009, Belgrade, Serbia

[CI 11] I. Jaffal, C. Inard, C. Ghiaus (2009). Building heating demand evaluation with a simple polynomial function. 9th International Healthy Building Conference, 13-17 Septembre 2009, Syracuse, USA, CD ROM

[CI 12] I. Jaffal, C. Inard, C. Ghiaus (2008). Simplified envelope thermal modelling method based on the design of experiments. 29th AIVC International Conference, 14-16 Octobre 2008, Kyoto, Japon, V.2, p. 203-208

[CI 13] I. Jaffal, C. Inard, C. Ghiaus (2009). Simplified statistical method to predict building annual heating demand. 4th International Building Physics Conference, 14-18 Juin 2009, Istanbul, Turquie, p. 553-558

[CI 14] A. Sempey, C. Inard, **C. Ghiaus**, C. Allery (2007). Control of temperatures in indoor spaces. Proceedings of 2nd Passive and Low Energy Cooling Conference (PALEN), 27-29 Sept. 2007, Crete, Grece, p. 919-923, ISBN 978-960-6746-02-4

[CI 15] A. Sempey, C. Inard, **C. Ghiaus**, C. Allery (2007). Reduced order model for air temperature control in indoor spaces. Proceedings of 2nd Passive and Low Energy Cooling Conference (PALEN), 27-29 Sept. 2007, Crete, Grece, p. 924-928, ISBN 978-960-6746-02-4

[CI 16] A. Chicinas, **C. Ghiaus**, C. Inard (2006). Grey model identification of constant volume air handling unit. Part 1: Discrete Models/. Healthy Buildings 2006, vol. 4, Materials, Systems and Technologies for Healthy Buildings, Lisboa, Portugal 4-8 June 2006, p.199-204, ISBN 989-95067-1-0.

[CI 17] A. Chicinas, **C. Ghiaus**, C. Inard (2006). Grey model identification of constant volume air handling unit. Part 2: Parameter Identification/. Healthy Buildings 2006, vol. 4, Materials, Systems and Technologies for Healthy Buildings, Lisboa, Portugal 4-8 June 2006, p.205-210, ISBN 989-95067-1-0.

[CI 18] **C. Ghiaus,** F. Allard, M. Santamouris, C. Georgakis, C.-A. Roulet, M. Germano, F. Tillenkamp, N. Heijmans, F. Nicol, E. Maldonado, M. Almeida, G. Guarracino, L. Roche (2005). Natural ventilation of urban buildings – summary of URBVENT project. Proceedings of 1st International conferece Passive and Low Energy cooling for Built Environment PALENC, ISBN 960-88152-4-7 pp. 29-34, Santorini, Greece, 19-21 May 2005

[CI 19] F. Allard, **C. Ghiaus**, Y. Mansouri (2003). Natural ventilation for health, comfort and efficiency. Proceedings ENAC-COTEDI 2003, Curitiba, Brazil, 5-7 Nov. 2003

[CI 20] **C. Ghiaus**, F. Caïni, R. Belarbi (2003). Linear discriminant analysis applied to forecast ozone concentration classes in sea-breeze regime. 5th International Conference on Urban Climate, Lodz, Poland. pp. 141-144, 1-5 September 2003

[CI 21] V. Iordache, P. Blondeau, **C. Ghiaus**, F. Allard (2003). Surveillance en temps réel des niveaux de pollution en O3 et NO2 a l'intérieur et l'extérieur des bâtiments, Conferinta Internationala *CIEM*, Bucuresti , Romania, 30 Octombrie 2003

[CI 22] F. Allard, **C. Ghiaus**, Y. Mansouri (2003). Natural ventilation strategies. *Proceedings Workshop EnerBuild RTD*. Budapest 24-25 January 2003, ISBN 80-239-0742-5, pp. 46-64

[CI 23] **C. Ghiaus**, A.H.C. van Paassen, C. Inard (2003). Evaluation of the indoor temperature field using a given air velocity distribution. *Workshop Matlab/Simulink Building and HVAC simulation*. Paris, France, 23-24 October 2003.

[CI 24] M. Germano, **C. Ghiaus** (2003). Multicriteria assessment of the natural ventilation potential of a building in an urban environment. CISBAT 2003. Lausanne, Switzerland. 8 October 2003, pp. 173-178

[CI 25] **C. Ghiaus** (2003). Dynamic compensation of feed-forward control of buildings. CISBAT 2003. Lausanne, Switzerland. 8 October 2003, pp. 315-322

[CI 26] **C. Ghiaus**, F. Allard (2003). Statistical interpretation of the results of building simulation and its use in design decisions. Building Simulation 2003, 8th Intl. IBPSA Conference, Eindhoven, Netherlands, 11-15 August 2003, pp. 387-390

[CI 27] **C. Ghiaus**, F. Allard (2003). Interprétation statistique des résultats de simulations de comportement thermique des bâtiments. VI-e Colloque Interuniversitaire Franco-Québécois, Thermique des systèmes, Université de Laval, Québec, 26-28 mai 2003, pp. 11-02

[CI 28] **C. Ghiaus**, F. Allard (2002). Assessment of natural ventilation potential of a region using degree-days estimated on global weather data, *EPIC 2002 AIVC Conference Energy efficient and healthy buildings in sustainable cities*, Lyon, 23-26 October, 2002, pp. 475-480

[CI 29] M. Germano, C.-A. Roulet, F. Allard, **C. Ghiaus** (2002). Potential for natural ventilation in urban context: an assessment method, *EPIC 2002 AIVC Conference Energy efficient and healthy buildings in sustainable cities*, Lyon, 23-26 October, 2002, pp. 519-524

[CI 30] M. Kolokotroni, R. Watkins, M. Santamouris, K. Nichou, F. Allard, R. Belarbi, **C. Ghiaus**, S. Alvarez, J. M. Salmeron-Lissen (2002). Passive ventilation cooling in urban buildings: an estimation of potential environmental impact and benefits, *EPIC 2002 AIVC Conference Energy efficient and healthy buildings in sustainable cities*, Lyon, 23-26 October, 2002, pp. 531-536

[CI 31] **C. Ghiaus**, F. Allard (2002). Assessing climatic suitability to natural ventilation by using global and satellite climatic data, *Air Distribution in Rooms*, 8th *International Conference on Air Distribution in Rooms,* Copenhagen, Denmark, 8-11 September, 2002, ISBN 87-989117-0-8, pp. 625-628

[CI 32] C.-A. Roulet, M. Germano, F. Allard, **C. Ghiaus** (2002). Potential for natural ventilation in urban context: an assessment method. Proceedings Indoor Air 2002, 9th International Conference on Indoor Air Quality and Climate, (Full paper on CD), June 30-July 5 2002, Monterey, California, USA, pp. 830-835

[CI 33] M. Kolokotroni, R Watkins, M Santamouris, K Niachou, F Allard, R Belarbi, **C Ghiaus**, S Alvarez, J M Salmeron-Lissen (2002). Passive ventilation cooling in urban buildings: an estiamtion of potential environmental impact benefits, *EPIC 2002 AIVC Conference Energy efficient and healthy buildings in sustainable cities*, Lyon, 23-26 October, 2002

[CI 34] **C. Ghiaus**, R. Belarbi, F. Allard (2002). Evaluation of natural ventilation potential by using degree-day, *Forum international sur les énergies renouvelables*, Tétouan, Maroc, 8-10 mai 2002, pp. 467-473

[CI 35] **C. Ghiaus**, A. Meslem, C. Inard, M. Robitu (2001). An Integral Solution for Trajectory and Impingement Point Location of Axisymetric Offset Isothermal Wall Jets, 7th *REHVA World Congress CLIMA 2000*, Napoli 15-18 Sept. 2001, Paper Abstracts pp.137, Full paper on CD ID 321

[CI 36] **C. Ghiaus**, F. Allard, R. Belarbi (2001). Optimal Settings of Residential Oil Burners by Using Response Surface Methodology, 7th *REHVA World Congress CLIMA 2000*, Napoli 15-18 Sept. 2001, Paper Abstracts pp.137, Full paper on CD ID 317

[CI 37] **C. Ghiaus**, F. Allard, R. Belarbi (2001). Optimisation du point de fonctionnement d'un brûleur à l'aide de la méthode des surfaces de réponse. *Ve Colloque Interuniversitaire Franco-Québécois*, Lyon, 28-30 mai 2001, pp. 389-395, 2001

[CI 38] M. Kolokotroni, M. Santamouris, K. Papakonstantantinou, C. Georkakis, F. Allard, **C. Ghiaus,** S. Alvarez, J. Palmer, R. Watkins (2001). SOLVENT: Development of Strategies for the Efficient Use of Solar and Passive Ventilation in Urban Buildings, 7th REHVA World Congress CLIMA 2000, Napoli 15-18 Sept. 2001, Paper Abstracts pp.59, Full paper on CD ID 146

[CI 39] M. Kolokotroni, M. Santamouris, F. Allard, **C. Ghiaus,** S. Alvarez, J. Palmer (2001). SOLVENT: Development of Strategies for the Efficient Use of Solar and Passive Ventilation in Urban Buildings, 22nd Annnual AIVC Conference, Bath, UK, 11-14 Sept. 2001.

[CI 40] **C. Ghiaus**, A. Meslem, F. Allard, M. Robitu (2000). Locating the separation point of nonisothermal wall-jets using computer vision, dans H.B. Awbi (éditeur) *Air Distribution in Rooms*, *Proceedings of the 7th International Conference on Air Distribution in Rooms, Reading, UK, 9-12 juillet*, ISBN 0 080 43017 1, pp. 485-490, Elsevier Science, 2000

[CI 41] V. Iordache, **C. Ghiaus**, P. Blondeau, F. Allard (2000). Statistical prediction model of the indoor/outdoor air pollutant transfer, dans H.B. Awbi (éditeur) *Air Distribution in Rooms*, *Proceedings of the 7th International Conference on Air Distribution in Rooms, Reading, UK, 9-12 juillet*, ISBN 0 080 43017 1, pp. 1219-1224, Elsevier Science, 2000

[CI 42] **C. Ghiaus** (1998). A fast way to solve the systems of transport differential equations, *Differential Equations - Section of International Congress of Mathematics,* Prague, République Tchèque, 1998

[CI 43] **C. Ghiaus**, X. Peng, A.H.C. van Paassen, A.G. Ghiaus (1995). A continuous time dynamic model of temperature in air conditioned rooms, *Proceedings of 2nd International Symposium on HVAC,* Beijing, China, 1995, pp. 382-391

[CI 44] **C. Ghiaus**, X. Peng, A.H.C. van Paassen. A state-space representation of the dynamic model of air temperature distribution, *Proceedings of 19th International Congress of Refrigeration*, The Hague, The Netherlands, 1995

[CI 45] **C. Ghiaus** (1995). Statistic identification of a district heating system - Dynamic model, *Proceedings of the 5th International Symposium on District Heating Systems*, Espoo, Finland, 1995

[CI 46] **C. Ghiaus**, F. Chiriac, C. Ionescu (1994). Discrete dynamics models for buildings, *Proceedings of the 2nd Bucharest International Refrigerating and Air Conditioning Symposium*, BIRAC'94, 1994

[CI 47] **C. Ghiaus** (1992). ARMA models for buildings, *Proceedings of The 6th International Conference on 'Heat Transfer and Refrigeration'*, Bucarest, Roumanie, 1992

5   National journals

[NJ 1] A. Chicinas, **C. Ghiaus**, A. Domsa, I. Nastase (2004). Detectarea defectelor intr-o centrala de climatizare a aerului cu flux simplu (Détection des défauts dans un centrale de traitment de l'air simple flux). *Instalatorul (Journal de l'association roumaine d'ingénieurs d'installation)*, no. 8, pp. 38-42, 2004

[NJ 2] **C. Ghiaus**, A.-G. Ghiaus (2005). *Smart Buildings (III) – Energy savings and environmental quality*, in Romanian: *Cladiri inteligente (III) – Economia de energie si calitatea spatiului amenajat*, UTCB Scientific Bulletin Nr. 2/2005, Bucharest, pp. 30-37

[NJ 3] **C. Ghiaus**, A.-G. Ghiaus (2005). *Smart Buildings (II) –Thermal comfort in adaptive buildings*, in Romanian: *Cladiri inteligente (II) –Confortul termic in cladiri adaptive*, UTCB Scientific Bulletin Nr. 1, Bucharest, pp. 14-21

[NJ 4] **C. Ghiaus**, A.-G. Ghiaus (2005). *Smart Buildings (I) - Urban environment, energy and buildings*, in Romanian: *Cladiri inteligente (I) - Mediul urban, energia si cladirile*, UTCB Scientific Bulletin Nr. 1, Bucharest, pp. 38-43

[NJ 5] V. Iordache, P. Blondeau, **C. Ghiaus**, F. Allard (2003). Permeabilitatea la aer a cladirilor (La perméabilité des bâtiments), Revista Tehnica Instalatiilor, nr III.6, 2003, Tirgu Mures, Romania

[NJ 6] R. Belarbi, **C. Ghiaus**, F. Allard (2001). Approche d'évaluation du potentiel des systèmes passifs de rafraîchissement, *Anales du Bâtiment et des Travaux Publics*, N° 6/2001, pp. 35-41, 2001

[NJ 7] **C. Ghiaus**, D. Popescu (2001). La conception assistée par ordinateur de schémas électriques (II), *Electricianul (Journal de l'association roumaine d'ingénieurs de génie électrique)*, no. 2, pp. 36-37, 2001

[NJ 8] **C. Ghiaus,** D. Popescu (2001). La conception assistée par ordinateur de schémas électriques (I), *Electricianul (Journal de l'association roumaine d'ingénieurs de génie électrique)*, no. 1, pp. 38-39, 2001

[NJ 9] **C. Ghiaus** (2001). Le contrôle de la legionelle dans les réseaux d'alimentation d'eau, *Instalatorul (Journal de l'association roumaine d'ingénieurs d'installation)*, no. 3, pp. 38-40, 2001

[NJ 10] **C. Ghiaus.** Visualisation d'écoulements – la nouvelle tendance dans la technique d'évaluation de la qualité de distribution de l'air (2000). *Instalatorul (Journal de l'association roumaine d'ingénieurs d'installation)*, no.7, pp 15-17, 2000

[NJ 11] **C. Ghiaus** (1998). Contrôlabilité et linéarité des systèmes de réglage local de la température, *Instalatorul (Journal de l'association roumaine d'ingénieurs d'installation)*, no. 1/1998

[NJ 12] **C. Ghiaus** (1997). Principes d'automatisation d'équipements du bâtiment, *Instalatorul (Journal de l'association roumaine d'ingénieurs d'installation)*, no.5-6/1997

[NJ 13] **C. Ghiaus** (1996). Principes d'automatisation de ventilo-convecteurs, *Instalatorul (Journal de l'association roumaine d'ingénieurs d'installation)*, no.3/1996

[NJ 14] C. Ionescu, **C. Ghiaus** (1993). Comment éviter les boucles de masse, *Electricianul (Journal de la Societé Roumaine d'Installations Electriques et d'Automatisation)*, 1993

[NJ 15] **C. Ghiaus**, D. Cipaianu (1988). Management en cascade de production, *Revista Economica, Journal National Roumaine d'Economie,* Bucarest, 1988

[NJ 16] **C. Ghiaus** (1984). Automatisme avec microprocesseur d'une bétonnière, *Bulletin Scientifique des Etudiants de l'Université Technique de Construction*

[NJ 17] **C. Ghiaus** (1984). Etude et automatisme d'une pompe à chaleur, *Bulletin Scientifique des Etudiants de l'Université Technique de Construction*

[NJ 18] **C. Ghiaus** (1983). Programmation linéaire – application en activité de travaux dans les projets de bâtiment, *Bulletin Scientifique des Etudiants de l'Université Technique de Construction*

[NJ 19] **C. Ghiaus** (1980). Management, application et efficacité en l'association d'étudiants, *Bulletin Scientifique des Etudiants de l'Université Technique de Construction*

[NJ 20] **C. Ghiaus** (1980). Système, structure, structuralisme, *Bulletin Scientifique des Etudiants de l'Université Technique de Construction*, Roumanie

6 Proceedings of national congresses

[NC 1] **I. Hazyuk**, C. Ghiaus, D. Isoc (2010). Estimation optimale des charges de chauffage intermittent. *IBPSA*, 9-10 Novembre 2010, Moret-sur-Loing, France

[NC 2] **C. Ghiaus**, G.-A. Ghiaus (2004). Le refroidissement des bâtiments adaptatifs par la ventilation (Racirea cladirilor adaptive prin ventilare). *Conférence scientifique de la faculté d'installations de l'Université Technique de Construction de Bucarest*, Bucarest, Roumanie, 24-26 nov. 2004, pp. 128-135

[NC 3] V. Iordache, P. Blondeau, **C. Ghiaus**, F. Allard (2003). Starea timplariei - parametru ce influenteaza permeabilitatea la aer a cladirii, (L'état de la menuiserie – paramètre qui influence la perméabilité du bâtiment) *Conférence scientifique de la faculté d'installations de l'Université Technique de Construction de Bucarest*, Bucarest, Roumanie, 27-28 nov. 2003

[NC 4] V. Iordache, **C. Ghiaus**, P. Blondeau, F. Allard (2003). Outdoor-Indoor pollutant transfer. *Conférence scientifique de la faculté d'installations de l'Université Technique de Construction de Bucarest*, Bucarest, Roumanie, 27-28 nov. 2003

[NC 5] V. Iordache, P. Blondeau, **C. Ghiaus**, F. Allard (2003). L'influence de la perméabilité sur le transfert d'ozone de l'extérieur vers l'intérieur des bâtiments. *Actes de 37ème Conférence Scientifique de l'Association Roumaine des Ingénieurs en Installation*, Sinaia, Roumanie, 15 oct. 2003

[NC 6] **C. Ghiaus**, F. Allard, F. Caini, A. Gazeau (2000). La prévision des pics d'ozone en régime de brise à l'aide de la modélisation neuro-floue, *Journées thématiques Automatique et Environnement*, Nancy, 9-10 mars, 2000

[NC 7] V. Iordache, **C. Ghiaus**, P. Blondeau, F. Allard (2000). Modèle statistique de prédiction du transfert des polluants atmosphériques de l'extérieur vers l'intérieur des espaces habitables, *Actes du forum des associations du Génie Civil et Urbain*, INSA-Lyon 27-28 juin 2000, ISBN 2-9509268-8-6, pp. 117-124, 2000

[NC 8] **C. Ghiaus** (2001)**.** Stictiunea si oscilatiile buclelor de reglare, *Actes de 35ème Conférence Scientifique de l'Association Roumaine des Ingénieurs en Installation*, Sinaia 2-5 oct., vol.2, pp. 86-92, 2001

[NC 9] C. Colda, **C. Ghiaus**, M. Teaca (1998). Méthodes neuronales appliquées à l'étude de la pollution atmosphérique, *Actes de la Conférence de l'Ingénierie du vent*, Bucarest, 1998

[NC 10] **C. Ghiaus** (1995). Modélisation avec les réseaux neuronaux, *Conférence scientifique de la faculté d'installations de l'Université Technique de Construction de Bucarest*, Bucarest, Roumanie, 1995

[NC 11] **C. Ghiaus**, A. Racoviceanu (1994). La conception et la mise en œuvre des automates séquentiels avec des relais électromagnétiques, *Actes de 27ème Conférence Scientifique de l'association Roumaine des Ingénieurs en Installation*, Sinaia, 1994, pp. 206-215

[NC 12] **C. Ghiaus** (1992). Nouveaux procédés de contrôle intelligent d'équipement du bâtiment, *Actes de la 5ème Conférence Scientifique de la Société d'Installations Electriques et d'Automatisation de Roumanie*, Sinaia, 1992

[NC 13] **C. Ghiaus**, C. Ionescu (1992). Décisions basées sur simulation du réseau Petri, *Actes de la Conférence Scientifique "Science moderne et énergie"*, Cluj-Napoca, 1992

[NC 14] **C. Ghiaus**, C. Ionescu (199&). Réseaux Pétri implémentés en automates programmables, *Actes de la 25ème Conférence Scientifique de l'association Roumaine des Ingénieurs en Installation*, Sinaia, 1991

[NC 15] **C. Ghiaus** (1990). Automates programmables dans l'automatisme d'équipement du bâtiment, *Actes de la 24ème Conférence Scientifique de l'association roumaine des Ingénieurs en Installation*, Sinaia, 1990

[NC 16] **C. Ghiaus**, L. Stanila (1987). Contrôle hiérarchique d'une station de mélange*, Actes de la 40ème Conférence Nationale "Systèmes, Modèles, Informatique"*, Académie Roumaine, Bucarest, 1987

[NC 17] **C. Ghiaus** (1984). Le modèle dynamique d'une pompe à chaleur, *Actes de la 17-ème Session Scientifique Nationale des Etudiants*, Université Technique de Construction de Bucarest, 1984

[NC 18] **C. Ghiaus** (1983)**.** Management – une expérience effectuée à l'Université Technique de Construction,*, Actes de la 16-ème Session Scientifique Nationale des Etudiants*, Université Babes-Bolyai, Cluj-Napoca, 1983

7   Educational books

1.   **C. Ghiaus.** Commandes séquentielles : cahiers de charge et implémentations. Support de cours. Université de La Rochelle, 2002

2.   **C. Ghiaus**. Analyse et synthèse des systèmes de contrôle. Support de cours. Université de La Rochelle**,** 2004

3.   **C. Ghiaus**. *Conception assistée par ordinateur* (en français et en roumain), Maison d'Edition de l'Université Technique de Construction, Bucarest, 1997

4.   **C. Ghiaus**. *State-space representation of indoor-air dynamic model, MATLAB implementation¸* Laboratorium voor Koudetechniek en Klimaatregeling, Technische Universiteit Delft, Pays Bas, 1995

5.   **C. Ghiaus**. *Know how to make computer controlled experiments on fan-coil unit,* R. K-227, Laboratorium voor Koudetechniek en Klimaatregeling, Technische Universiteit Delft, Pays Bas, 1995

6.   **C. Ghiaus**. *Dynamic models of rooms for use under MATLAB,* R. K-223, Laboratorium voor Koudetechniek en Klimaatregeling, Technische Universiteit Delft, Pays Bas, 1995

7.   C. Ionescu, **C. Ghiaus**, O. Noran. *L'analyse des systèmes automatiques* (en roumain), Maison d'Edition de l'Université Technique du Construction, Bucarest, 1993