

EMMANUEL WITRANT

Professor at University Grenoble Alpes / GIPSA-lab

Visiting Professor at Dalhousie University / ACM-lab

B.Sc. in Aerospace Engineering - Ph.D. in Automatic Control - HDR in Physics

Born in 1977, September 13th, in France (38)

✉ GIPSA-lab

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Current position

UGA / GIPSA-LAB, GRENOBLE, FRANCE. PROFESSOR.

Research at *Grenoble Images Parole Signal Automatique* and teaching at *UFR PhITEM* (Physics, Engineering, Earth, Environnement, Mecanics).

- ▷ *Theoretical and applied research on modeling and control of heterogeneous transport phenomena:*
 - *transport: of waves and particles in tokamak plasmas (thermonuclear fusion), of trace gases in porous media (polar firns), of ice on a bedrock (polar ice caps), of gases in ventilation networks, of information in communication networks;*
 - *stabilization, identification and optimization of systems described by partial differential equations or implying time delays.*
- ▷ *Main collaborations (joint publi. and/or projects):*
 - *Thermonuclear fusion and large-scale instruments: CEA (IRFM-ITER) / Supélec / LISA / LJK (France), CERN / EPFL (Switzerland), KTH (Sweden), IIT-UA (USA).*
 - *Glaciology and environmental studies: IGE / LSCE (France), IMAU (Netherlands), CIC (Denmark), INSTAAR / NOAA / UC (USA), UEA (UK), Univ. Bern (Switzerland), ULB (Belgium).*
 - *Industrial applications: mining/building ventilation, car engines: ABB / Boliden (Sweden), Renault/PRISME (France), U. del Valle / UPTC (Colombia).*
 - *Info. transport and networked cont. syst.: KTH (Sweden), Un. of L'Aquila and Sienna (Italy).*

Since 2007

PHITEM / GIPSA-LAB, GRENOBLE, FRANCE. TASKS AND KEY DATES.

- ▷ *2007-2020: associate professor at UGA.*
- ▷ *Since 2007: head of Automatic Control teachings (B.&M.Sc., managing ≈ 800h of classes/year).*
- ▷ *Since 2007: creation and head of the PhyAuto lab (experimental platform).*
- ▷ *Since 2008: creation and head of the int. Master 2 in Systems, Control and Information Technologies.*
- ▷ *2012-2019: co-director and head of education for the Labex Persyval-lab.*
- ▷ *2013-2014: guest professor at Katholieke Univ. Leuven and Univ. Libre de Bruxelles, Belgium.*
- ▷ *2023-present: guest professor at Dalhousie University, Halifax, Canada.*
- ▷ *Since 2020: creation and head of the research team Infinity at GIPSA-lab.*
- ▷ *2020-2021: contrib. to the creation of the Master Electrical Engineering and Control Systems.*
- ▷ *2020: nominated member of the national council of Universities.*
- ▷ *Since 2010: National grant for excellency in research.*
- ▷ *Classes of Tai Chi Chuan for UGA employees: assistant professor, then main professor since 2018.*

Education

- 2015** UGA, FRANCE. HDR (HABILITATION À DIRIGER LA RECHERCHE) IN PHYSICS.
Modeling and Control of Inhomogeneous Transport Phenomena.
- 2005** INST. NAT. POLYTECHNIQUE DE GRENOBLE, FRANCE. PHD IN AUTOMATIC CONTROL.
Stabilization of Network Controlled Systems. INPG best Ph.D. thesis award.
- 2002** INPG/LAG, GRENOBLE, FRANCE. MASTER OF SCIENCE IN AUTOMATIC CONTROL.
Thesis on *Human Friendly Control: the Drive-by-Wire System* (grad. with honors)
- 2001** GEORGIA INSTITUTE OF TECHNOLOGY, ATLANTA, USA. BACHELOR OF SCIENCE IN AEROSPACE ENGINEERING.
Specialization in control theories. Dean's List.

Post-docs

- 2006-2007** ROYAL INST. OF TECH. (KTH), STOCKHOLM, SWEDEN. CONTROL SYSTEMS (11 MONTHS).
Ident. and control of networked embedded intelligent systems and distributed systems.
- 2006** CEA-CADARACHE, FRANCE. CONTROLLED THERMONUCLEAR FUSION (10 MONTHS).
Modeling, identification and control of the current profiles in Tokamak plasmas.

Professional Experience

- Since 2002** AUTOMATIC CONTROL AND INHOMOGENEOUS TRANSPORT.
- ▷ *Publications: 58 journal papers (including 3 in Nature and 1 Nature Geoscience), 5 patents, 2 books, 3 coordinations of conf. proceedings, 8 book chapters, 68 papers in international conference proceedings.*
 - ▷ *Projects: 21 international, 9 national, 7 industrial, 8 regional. Project coordinator for 21.*
 - ▷ *Advised students: 16 Ph.D., 13 post-docs / ATER, 28 Master 2, 6 Master 1.*
 - ▷ *Publication chair for the 2013 IFAC Joint Conference in Grenoble (SSSC, TdS, FDA).*
 - ▷ *Invited sessions organizer for IEEE and AIAA.*
 - ▷ *Reviewer for key journals / international conferences in Automatic Control, Thermonuclear Fusion and Environment.*
- 1999-2003** UNITED TECHNOLOGIES (1 YEAR, ATLANTA, USA), CERN (2 MONTHS, GENEVA, SWITZERLAND) AND UNIV. OF TWENTE (3 MONTHS, ENSCHEDE, NETHERLANDS). SPONSORED INTERNSHIPS.