

Francisco Llaneras Estrada

Researcher
Systems Engineering & Computational Biology

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EDUCATION

- 2005- PhD in Control Engineering, Robotics and Industrial Informatics
Universidad Politécnica de Valencia
- 2005- Ms. in Management and Marketing of Agronomical and Food-Industry
Universidad Politécnica de Valencia
- 1999-2005 B. Sc. Industrial Electronics and Control Systems Engineering
Universidad Politécnica de Valencia

ACADEMIC POSITIONS HELD

- 2006-2010 PhD scholar at DISA, Universidad Politécnica de Valencia
- 2009 Visitant at LCSB, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Duration: 2 months. Advisor: Prof. Vassily Hatzimanikatis
- 2007 Visitant at CESAME, Université Catholique de Louvain, Belgium
Duration: 3 months. Advisor: Prof. Georges Bastin
- 2005-2006 Research assistant at DISA, Universidad Politécnica de Valencia
Duration: 11 months
- 2004-2005 Final Project scholar at Biopolis SL
Duration: 6 months

RESEARCH INTERESTS

Systems biology // constraint-based modeling // metabolic flux analysis under data scarcity //
Bioreactor monitoring and control

PUBLICATIONS *International Journals*

- Llaneras F, Sala A, Picó J: A possibilistic framework for metabolic flux analysis, *BMC Systems Biology*, 3:73, (2009).
- Llaneras F, Picó J: Which metabolic pathways generate and characterise the flux space? A comparison among elementary modes, extreme..., *J. Biomedicine and biotechnology* (under review)
- Llaneras F, Picó J: Stoichiometric modelling of the cell metabolism, *Journal of Bioscience and Bioengineering*, 1, 1-12, (2008)
- Llaneras F, Picó J: A procedure for the estimation over time of metabolic fluxes in scenarios where measurements are uncertain and/or insufficient, *BMC Bioinformatics*, 8:42, (2007)
- Llaneras F, Picó J: An interval approach for dealing with flux distributions and elementary modes activity patterns. *Journal of Theoretical Biology*, 246(2), (2007)

PUBLICATIONS *Workshops and conferences*

- Llaneras F, Sala A, Picó J. Applications of possibilistic reasoning to intelligent system monitoring: a case study, *IEEE Multi-conference on Systems and Control*, MSC, (2009)
- Llaneras F, Sala A, Picó J. Possibilistic estimation of metabolic fluxes during a batch process accounting for extracellular dynamics, *Computer applications in biotechnology*, (under review)

- Tortajada M, Llaneras F, Picó J. Possibilistic estimation of metabolic fluxes during a batch process accounting for extracellular dynamics, *Computer applications in biotechnology*, (under review)
- Llaneras F, Sala A, Picó J. Dynamic flux balance analysis: a possibilistic approach, *Systems biology of microorganisms*, (under review)
- Llaneras F, Sala A, Picó J. A possibilistic framework for metabolic flux analysis, *Red Española de Biología de Sistemas*, (2008)
- Tortajada M, Llaneras F, Picó J. Constraint-based modelling applied to heterologous protein production with *P. pastoris*, *Red Española de Biología de Sistemas*, (2008)
- Llaneras F, Bastin G., Picó J. On metabolic flux analysis when measurements are insufficient and/or uncertain, *LAP Dysco workshop*, Belgium, (2007)
- Llaneras F, Tortajada M, Picó J. Structural analysis of metabolic pathways applied to heterologous protein production in *P. pastoris*, *European Congress on Biotechnology*, *7. Biotechnology*, 131(2)S209, (2007)
- Llaneras F, Picó J. The linkage between flux distributions and elementary modes activity patterns: An interval Approach, *International Symposium on Systems Biology*, ISBN (10): 84-611-1135-4, (2006)
- Llaneras F, Picó J, Navarro JL, Picó-Marco E. Entorno gráfico de simulación, monitorización y control de biorreactores, *XXVI Jornadas De Automática*, ISBN: 84-689-0703-8, (2005)
- García-Nieto S, Llosá A, Llaneras F, Sanchís J. Plataforma de simulación y control distribuido bajo tiempo real, *XXVI Jornadas De Automática*, ISBN: 84-689-0703-8, (2005)

TEACHING

| | |
|-----------|---|
| 2009-2010 | Automática Básica, Ingeniero industrial (2 créditos) Control Automático, Ingeniero aeronáutico (2,25 créditos) Control Inteligente, Ingeniero en automática (0,9 créditos) Regulación Automática, Ingeniero eléctrico (1,2 créditos) |
| 2008-2009 | Control Automático, Ingeniero aeronáutico (2,25 créditos) Comportamiento dinámico de sistemas, Ingeniero industrial (2 créditos) Sistemas Automáticos, Ingeniero en organización Industrial (1,6 créditos) |

OTHER MERITS

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|-------------------|--|
| Fellowship | Predoctoral fellowship «Formación Profesorado Universitario» Spanish Ministry of Science and Technology, (2006) |
| Article | Highly accessed article on BMC Systems Biology Llaneras et al. A possibilistic framework for metabolic flux analysis, (2009) |
| Other | Reviewer for «Biotechnology and Bioengineering», «Biotechnology Progress» and «Process Biochemistry» |
| Prize | Honorable mention in the «Premios Nacionales de Fin de Carrera» Award to most outstanding graduates Spanish Ministry of Education, (2005) |
| Prize | Valedictorian award or «Premio Extraordinario final de carrera» Award to the top graduate of the class, IX promotion of Industrial Electronics and Control Systems Engineering, Universidad Politécnica de Valencia, (2005) |