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Nationality: French  
Date of birth: December 8th, 1982

Curriculum Vitae

Last update: August 2015.

Academic experiences

2012 -  
Researcher (Starting Research Position) at Inria Sophia-Antipolis (Biocore team), France.

2010 - 2012  
Post-doctorate at AM2V (Analysis & Mathematical Modeling Valparaíso), Departamento de Matemática, Universidad Técnica Federico Santa María, Valparaíso, Chile with Pedro Gajardo.

2008 - 2010  
Post-doctorate at INRIA (the French national institute for research in computer science and control) of Sophia-Antipolis, COMORE research group (Modelling and control of renewable resources) with Olivier Bernard.

2005 - 2008  
Ph.D., Université de Technologie de Compiègne (UTC), France  
Title: Modelling and control of hairy root culture.  
Advisors: K. Shakourzadeh (UTC) and M. Boitel-Conti (UPJV)

2004 - 2005  
Master “Industrial and Urban Environment”, INSA de Lyon, France

2000 - 2005  
Engineering degree, INSA de Lyon, France. Specialized in energy and environmental engineering

Main Research interests

Modelling, control and optimization of biological systems. Applications to hairy root, microalgae, anaerobic digestion…

Publications

Most of my recent publications are available as preprints on: hal.inria.fr

- Journal articles in biotechnology/bioprocesses:


- Journal articles in control theory/applied mathematics:


- Conference Proceedings (peer reviewed):


C3. Mairet F, Bernard O. Robustness of closed-loop control to biodiversity: a didactic example. 19th IFAC World Congress, Cape Town (South Africa), 2014.


C5. Bayen T, Mairet F, Mazade M. Minimal time problem for a fed-batch bioreactor with a non admissible singular arc. European Control Conference (ECC14), Strasbourg (France), 2014.


C19. Mairet F, Moisan M, Bernard O. Estimation of lipid accumulation in microalgae with dynamic interval observers. 9th IEEE International Conference on Control & Automation (ICCA’11), Santiago (Chile), 2011.


C22. Mairet F, Bernard O. Coupling framers to get enhanced interval observers. Application to growth rate estimation in a photobioreactor. 48th IEEE Conference on Decision and Control (CDC), Shanghai (China), 2009.


- Preprints


- Workshop and Conference (without proceedings):


Projects

Participation to collaborative projects:


1 The French National Research Agency
- **FUI Salinalgue** (2011-2015): use endemic microalgae species in areas of high salinity (previously used to produce salt) to produce both biofuel (either lipid based or methane) and co-products.
- **ANR Symbiose** (2009-2012): improve the energetic balance of biofuel microalgal productions and recycle nitrogen and phosphorus. The project proposes to study the coupling between a microalgal production system and an anaerobic digester.

**Industrial transfers:**
- **Rhodia**: Simulator of anaerobic co-digestion based on ADM1 (2010).

**International collaborations:**
- **Inria Chile – CIRIC**, team Bionature.
- **Associated team Greencore** with PUCV, UFRO and UTFSM (Chile).

**Student supervisions**

**PhD:**
- Ghjuvan Grimaud (2013-), INRIA-LOV, France

**Master or engineer thesis:**
- Carlos Martinez (2014), Universidad de la Frontera, Chile
- Esteban Hernández (2013-2014), Universidad Técnica Federico Santa María, Chile
- Omar Risco (2012), Universidad Técnica Federico Santa María, Chile

**Teaching activities**

2007/2008: Process control, 86h, UTC, France
2005/2007: Physic Mechanic, 2x96h, UTC, France
2014: Lecture (3h) on modelling microalgae growth during the 3rd French-Chilean Workshop on Bioprocess Modeling, Valparaiso (Chile).

**Other activities**

- Organization of the 2nd French-Chilean Workshop on Bioprocess Modeling, Pucon (Chile), January 2012.
- Elected member of the Center Committee of Inria Sophia-Antipolis.

**Languages**

French : native language ; English : fluent ; Spanish : fluent.