

Ruben Chenevat

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Québec, Canada · August 2026

Research interests: Optimal control and dynamical systems — Decision-making under constraints and uncertainty — Biological and environmental modeling

CURRENT POSITION

Postdoctoral Researcher

Stochastic optimal control of constrained and jump systems, HJB equations, averaged cost control

École d'actuariat, Université Laval
Québec, Canada
Feb 2026–Sep 2026

PROFESSIONAL EXPERIENCE

Research Engineer

Modeling and optimal control of agrivoltaic systems

G-EAU, INRAE
Montpellier, France
Nov 2025–Jan 2026

EDUCATION

PhD in Mathematics and Modeling

“Optimal control of irrigation: double mathematical and agronomic modeling towards an application to the Optirrig model”
Supervisors: Alain Rapaport, Bruno Cheviron, Sébastien Roux

Université de Montpellier
MISTEA, INRAE
Montpellier, France
Oct 2022–Oct 2025

Master's degree in Mathematics

Analysis, Modeling, Simulation

Université Paris-Saclay
Gif-sur-Yvette, France
Sep 2021–Aug 2022

Normalien in Mathematics

Civil servant trainee status
Agrégation in Mathematics (session 2021)

École Normale Supérieure de Rennes
Rennes, France
Sep 2018–Aug 2022

RESEARCH INTERNSHIPS AND VISITS

Visit – Optimal control problems with state constraints for crop irrigation

In collaboration with Maria do Rosário de Pinho

SYSTEC, FEUP
Porto, Portugal
Jan 2025–Apr 2025

Internship – Uniqueness and minimality of vortex solutions in variational models

Supervisor: Radu Ignat

IMT, Université Paul Sabatier
Toulouse, France
Apr 2022–Aug 2022

Internship – Mathematical problems in the analysis of the stability and the structure of matter

Supervisor: Jan-Philip Solovej

QMATH, University of Copenhagen
Copenhagen, Denmark
May 2019–Jul 2019

PUBLICATIONS

Journal Articles

- [A2] About the bang-bang principle for controlled affine dynamics with Brownian noise.
Ruben Chenevat, Dan Goreac, Qinlong Li, Alain Rapaport.
Journal of Convex Analysis, 33, 801–816 (2026). Publisher page

- [A1] Optimal structures of crop irrigation strategies with state constraints.
Ruben Chenevat, Bruno Cheviron, Sébastien Roux, Alain Rapaport.
Journal of Optimization Theory and Applications, 208, 18 (2026). DOI: 10.1007/s10957-025-02854-7

Conference Papers

- [C3] Extremal stochastic controls for affine jump systems with applications to two-line insurance models.
Hezhen Bao, Ruben Chenevat, Dan Goreac, Juan Li.
15th Asian Control Conference (ASCC), Bali, Indonesia, 2026.
- [C2] Common structures of optimal solutions for a crop irrigation problem under various constraints and criteria.
Ruben Chenevat, Bruno Cheviron, Sébastien Roux, Alain Rapaport.
63rd IEEE Conference on Decision and Control (CDC), Milan, Italy, 2024. DOI: 10.1109/CDC56724.2024.10886226
- [C1] About the bang-bang principle for piecewise affine systems.
Ruben Chenevat, Bruno Cheviron, Sébastien Roux, Alain Rapaport.
63rd IEEE Conference on Decision and Control (CDC), Milan, Italy, 2024. DOI: 10.1109/CDC56724.2024.10886617

Preprints and Submitted Papers

- Extension of the bang-bang principle for piecewise affine dynamics under state constraints.
Ruben Chenevat, Bruno Cheviron, Sébastien Roux, Alain Rapaport.
(Submitted, April 2026).

TALKS IN INTERNATIONAL CONFERENCES

- “Optimizing crop irrigation under biological and operational constraints with meteorological uncertainty”
EUROGEN 2025, Lahti, Finland, Sep 2025.
- “Common structures of optimal solutions for a crop irrigation problem under various constraints and criteria”
CDC 2024, Milan, Italy, Dec 2024.
- “About the bang-bang principle for piecewise affine systems”
CDC 2024, Milan, Italy, Dec 2024.
- “About the bang-bang principle in a non-smooth setting”
FGS 2024, Gijón, Spain, Jun 2024.
- Poster: “Optimal structures for a model of crop irrigation with constraints”
SMAI-MODE 2024, Lyon, France, Mar 2024.

TEACHING

Tutorials – Logic and set theory First-year undergraduate level	Université de Montpellier Fall 2023
Lab sessions – Numerical analysis of ODEs and PDEs Third-year undergraduate level	Université de Montpellier Spring 2023
Tutorials – Analysis I: Functions of one variable and sequences First-year undergraduate level	Université de Montpellier Fall 2022 & 2023
Tutorials – Calculus First-year undergraduate level	Université de Montpellier Fall 2022 & 2023

RESEARCH FUNDING AND DOCTORAL LABELS

Hubert Curien partnership France-Portugal (Program PHC-PESSOA 2025-2027)
Project: “OITE: Optimizing Irrigation efficiency under Technical and Environmental constraints”

PhD label: International research school of Agreenium (EIR-A 2024)

PhD label: Digital agriculture convergence lab (#DigitAg 2023)

SCIENTIFIC ACTIVITIES

Project “BOUM” SMAI 2025

Funding for the organization of a workshop on “Optimization, Modeling and Control” (held on Jun 12, 2025)
Co-organized with Anas Bouali and Gildas Dadjo

Working group (Apr 2023–Jul 2025)
“Optimal Control & Pontryagin Maximum Principle”

ACADEMIC SERVICE

Reviewer for:

IFAC World Congress 2026

SKILLS

Languages: French (native), English (fluent), German (basic), Portuguese (basic)

Programming: Python, Julia, R, MATLAB

Optimal control software: BOCOP, Control Toolbox

Typesetting: LaTeX
