Pauline Chassonnery

Curriculum Vitæ

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personal webpage

Academic Background

Dec 2023 **PhD in Applied Mathematics**, *Paul Sabatier University*, Toulouse, France

July 2020 **Master's degree in Mathematics of Modelling, major Mathematics applied to Biological and Medical Sciences**, *Sorbonne University*, Paris, France

July 2018 **Master's degree in Mathematics Secondary-school and University Teaching**, *École Normale Supérieure de Cachan*, France

Research Experiences

PhD Thesis (September 2020 – December 2023)

Title **Mathematical 3D modelling of connective tissues architecture emergence.**

Supervisors Louis CASTEILLA and Diane PEURICHARD.

Institutes Restore Institute, University Toulouse 3 – Paul Sabatier & LJLL, Sorbonne University (France).

Master 2 intership (April – July 2020)

Title **Mathematical 3D modelling of adipose tissue morphogenesis.**

Supervisor Diane PEURICHARD.

Institute Laboratoire Jacques-Louis Lions, Sorbonne University (France).

Predoctoral year of research abroad (October 2018 – June 2019)

Title **Dynamical, multi-body interaction in a dense stellar system : formation of a super-massive black-hole.**

Supervisor Roberto CAPUZZO-DOLCETTA.

Institute Astrophysics Department, University of Roma La Sapienza (Italy).

Master 1 internship (April – July 2017)

Title **Integrating primitive tumors's shape to cancer modelization by a level-set approach.**

Supervisors Annabelle COLLIN and Olivier SAUT.

Institute Inria team MONC & Bordeaux Institute of Mathematics (France).

Bachelor internship (spring 2016)

Title **An interactive internet solver for the Riemann problem in digital fluid dynamic.**

Supervisors Matthieu ANCELLIN and Jean-Michel GHIDAGLIA.

Institute Center for MathematicaL studies and their Applications, ENS Cachan (France).

Teaching Experience

2020 – 2022 **Numerical series and Function series**, *Bachelor 2 of Mathematics, Sorbonne University*, Paris, France.
Teaching assistant (tutorial/exercises, exam correction and feedback), 112 hours total in french.

2020 – 2022 **Numerical analysis**, *Bachelor 3 of Mathematics, Sorbonne University*, Paris, France.
Teaching assistant (practical work with Python), 84 hours total in french.

Professional formations

Aug 2021 Virtual Summer school "Kinetic and fluid equations for collective dynamics", *France-Korea International Research Laboratory in Mathematics*, online.

2021 Organisation of the CARe graduate school workshop "Regeneration and Senescence : From Biological Mechanisms to Numerical Tools", *IUCT-Oncopole*, Toulouse, France.

Publications

[1] Pauline Chassonnery and Roberto Capuzzo-Dolcetta. Dynamics of a superdense cluster of black holes and the formation of the Galactic supermassive black hole. *Monthly Notices of the Royal Astronomical Society*, 504(3):3909–3921, Apr 2021.

[2] Pauline Chassonnery, Jenny Paupert, Anne Lorsignol, Childérick Sévérac, Marielle Ousset, Pierre Degond, Louis Casteilla, and Diane Peurichard. Fiber crosslinking drives the emergence of order in a 3D dynamical network model. *Royal Society Open Science*, 2024 (accepted).

Oral Communications and Posters

Jan 2023 CARe graduate school workshop "Numerical and technical tools to better investigate metabolism, inflammation and cancer" (oral communication)

Aug-Sep 2022 Mathematical Biology on the Mediterranean Conference, 3rd edition (oral communication)

June 2022 Restore Institute Scientific day (poster)

Languages

French Native

English Fluent, TOEFL certification with a mark of 640/677

Computer Skills

Languages Proficient with Python, Fortran, Matlab and LaTeX. Basic knowledge for C++ and Maple.

OS Proficient on Mac and Linux. Can work on Windows.