ELISE GROSJEAN

Kaiserslautern Universität (TUK), Germany

(+33)0609501658 ⋄ grosjean@mathematik.uni-kl.de ⋄ GitHub ⋄ Website

PROFESSIONAL

Postdoctoral research in Applied Mathematics, Felix-Klein-Institute für Mathematik, Kaiserslautern, Germany
03/2022 - 09/2023

PhD in Applied Mathematics, Sorbonne Université, Paris   *11/2018 - 03/2022*

EDUCATION

PhD in Applied Mathematics   *11/2018 - 03/2022*
under the supervision of Yvon Maday at Jacques-Louis Lions laboratory (LJLL)
Subject: Non-Intrusive Reduced Basis methods (NIRB)

Master in the mathematics of modeling   *2015 - 2018*
at Sorbonne-Universite

Engineer school in Applied Mathematics and Computer Science   *2015 - 2018*
at Polytech-Paris UPMC

Bachelor in Fundamental Mathematics (Sorbonne-Universite)   *2012 - 2015*

PROFESSIONAL PROJECTS

Study of a macroscopic problem for meniscus tissue regeneration   *2022-2023*
Implementation with FreeFem++ (DG-FEM) and sensitivity analysis combined with model order reduction [1]

Implementation of a Non-Intrusive Reduced Basis module in an open-source library [2]   *2018-2021*
Contributed to the online library with EDF and other partners on NIRB methods in Python and C++. Application on offshore wind turbines.

C++ Finite Elements Method implementation [3]   *2018*
Implemented the Finite Elements method to solve 2D Navier-Stokes equation in a channel.

Internship at Jacques-Louis Lions laboratory   *March - August 2018*
Study of the velocity stability threshold in a steam generator of a nuclear power plant by an algebraic method and an ALE finite element method (Freefem, Matlab)

Internship at the climate research institute IMK-IFU at Garmisch-Partenkirchen (Germany)   *June - August 2017*
Dynamic global vegetation model (DGVM) to improve crops and the quality of soils in East Africa (R, LPJ-GUESS)

Internship at Saint-Antoine hostpial, Sorbonne Université   *July - August 2016*
Implementation of Pipeline scripts on a cluster for DNA sequencing

TEACHING

Tutor (TD) - Differential-Algebraic Equations, Master 1, Kaiserslautern Universität   *2022 - 2023*
Tutor (TP) - Approximation of PDEs, Master 1, Sorbonne Université   *2018 - 2021*
Tutor (TD/TP) - Numerical analysis, 1^{rst} year   *2020 - 2021*
l'École nationale de la statistique et de l'administration économique Paris (ENSAE)
Tutor (TP) - Python, L3, Sorbonne Université   *2018 - 2020*
Tutor (TP) - Numerical methods for ODEs, L3, Sorbonne Université   *2018 - 2020*
Tutor (TD/TP) - Numerical methods for differential equations, L3, Sorbonne Université   *2018 - 2020*

SKILLS

Langage French (Mother tongue), English (Fluent,TOEIC 900), German (B2), Hindi (Notions)
Computer skills C/C++, Bash, Python, Matlab, Git, Scilab, MPI, OpenMP, FreeFem, Paraview, GMSH, Salome, Code Saturne.

---

[1]https ://github.com/grosjean1/SensitivityAnalysisWithNIRBTwoGridMethod
[2]https://gitlab.com/mor_dicus/
[3]https ://github.com/grosjean1/navierStokes

ACADEMIC ACHIEVEMENTS

With Bernd Simeon, **The non-intrusive reduced basis two-grid method applied to sensitivity analysis** (Preprint) *01/2023*

With Yvon Maday, **Error estimate of the Non-Intrusive Reduced Basis (NIRB) two-grid method with parabolic equations** (Preprint) *09/2022*

With Yvon Maday, **A doubly reduced approximation for the solution to PDE's based on a domain truncation and a reduced basis method: Application to Navier-Stokes equations** (Preprint) *02/2022*

With Yvon Maday, **Error estimate of the Non-Intrusive Reduced Basis method with finite volume schemes** (m2an 10.1051/m2an/2021044) *07/2021*

Poster Session - application of reduced basis methods to wind farms *11/2019*
Recent talks:

- Department of Mathematics, university of Dhaka (Bangladesh) - Studying mathematics in France *01/2023*

- MAP5 Seminar - NIRB method applied to sensitivity analysis *11/2022*

- CANUM2022 - NIRB method applied to parabolic equations *06/2022*

- Simulation and Optimization for Renewable Marine Energies (EMRSIM22), talk on the NIRB method applied to wind farms *06/2022*

- SPP2311-Kick-off, presentation of the sensitivity analysis applied to the meniscus regeneration tissue problem, Stuttgart *05/2022*

- Workshop Mathematics of High-Performance Computing, Prague *09/2021*

- CANUM2020 - contributions *12/2020*

- Presentation of the two-grids method with EDF *10/2020*

- GTT of LJLL *10/2020*

- Model Order Reduction Summer School MORSS2020 *09/2020*

RESPONSABILITIES

Supervision of Bachelor and Master students *2022/2023*

- _ Henry Jäger

- _ Milena Röhrs

- _ Aishwarya Nair

- _ Yi-Chin Wang

Reviews

- _ Mathematics and Computers in Simulation (MATCOM) / Elsevier

Organization of the "lab tea", weekly conviviality events of the LJLL laboratory *2019/2020*