Jean-Baptiste WAHL

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Positions

2017-present

Research Engineer on the Eye2Brain / MSO4SC Projects
at CEMOSIS, Strasbourg, France

- Development of new models to quantitatively describe metabolic connections between the eye and the brain.
- 3D/0D coupling between Feel++ and OpenModelica
- HPC and cloud technology: MSO4SC project

2014-present

Active Developer in the Feel++ Project
An open source finite element library

- Main developer on the reduced basis framework (C++)
- Parallel programming and HPC
- Scientific computing, Linear algebra, Numerical algorithms

Formation

2014-present

Ph.D.: *The Reduced Basis Method Applied to Aerothermal Simulations*
at University of Strasbourg, France

- Aerothermal simulations (finite element method, coupled non-linear system)
- Implementation: Stabilization methods and turbulence model in Feel++
- Model order reduction: Reduced Basis Method for non-linear problems

2012-2014

Master degree in Applied Mathematics
at University of Strasbourg, France

Skills

COMPUTER SCIENCE

- **Advanced C++ skills**: meta-programming, MPI, scientific computing
- **Daily Use**: cmake, boost, git, openmp, LaTeX, Unix systems
- **Basics**: python, slurm, java, html, matlab, fortran, docker, singularity

APPLIED MATHEMATICS

- **Modeling**: finite element method, CFD, coupled systems
- **Linear Algebra**: preconditioning methods, iterative solvers
- **Model Order Reduction**: Certified reduced basis, proper orthogonal decomposition, Proper generalized decomposition

MISCELLANEOUS

- **Linguistics**: French (mother tongue), English

Publications

in preparation	*Review and Implementation of Streamline Diffusion Methods on Anisotropic Meshes, Application to Aerothermal Simulations* with C. Prud'homme
in preparation	*Implementation of RANS models in Feel++ library* with C. Prud'homme, Y. Hoarau, V. Chabannes
in preparation	*Simultaneous EIM and RB Construction for Non-linear Operators, Application to Aerothermal Problems* with C. Prud'homme, V. Chabannes

Talks and Seminars

2018	**ECMI**, Budapest, Hungary *Simultaneous EIM and RB Construction for Non-linear Operators, Application to Aerothermal Problems*
2018	**MoRePaS**, Nantes, France *High Reynolds Aerothermal Simulations and Reduced Basis*
2017	**Feel++ Users Days**, Strasbourg, France *Aerothermal Simulation and Model Order Reduction, Using the Open-Source Framework Feel++*
2018	**ANR CHORUS Workshop**, Paris, France *Model Order Reduction for Multi-physic Problems, Using the Open-Source Framework Feel++*
2017	**A3F**, Strasbourg, France *Aerothermal Simulation and Model Order Reduction, using the Open-Source Framework Feel++*
2015	**SimRace**, Paris, France *Solving Strategy for Large Scale Aerothermal Simulation using the Open-Source Framework Feel++*
2015	**Feel++ Users Days**, Strasbourg, France *Aerothermal Simulations : Towards Reduced Basis Applications*
2014	**Research Group on Model Order Reduction**, Porquerolles, France

Teaching

2015-present	**Tutorials of mathematics** in highly selective classes to prepare for the competitive exams to the French "Grandes Ecoles"
2014-2017	**Lesson-Tuition of analysis** , L1 Sciences

Research Areas

Numerical analysis, Numerical method for partial differential equations, Model order reduction, Computational fluid dynamic, Mathematical model applied to medicine, Finite element method, HPC computing