

Marc Duruflé  
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## Education

- 2002 - 2006 • **I.N.R.I.A Rocquencourt**, top French Research Institute, PhD student in applied mathematics: *Numerical Integration and High-Order Finite Element Method applied to Time-harmonic Maxwell's Equations*
- 1999 - 2002 • **École Centrale de Lyon**, top French Engineering School, Engineering Degree with a specialization in *Applied Mathematics*
- **University of Lyon 1** D.E.A. (Master Degree) in *Numerical Analysis and Scientific Computation*

## Experience

- 2008-présent • **Université Bordeaux I** Assistant professor at University of Bordeaux and ENSEIRB-MATMECA.
- 2007 - 2008 • **Sandia National Laboratories**, postdoctoral fellow : *Spectral finite element methods applied to Vlasov-Maxwell equations in 2-D*
- 2006 • **I.N.R.I.A Rocquencourt**, development engineer on a code for the resolution of time-domain Maxwell equations with discontinuous Galerkin method.
- 2003-2004 • **ENSTA** Teaching assistant on "Scientific computing"
- 2002 (5 months) • **I.N.R.I.A Rocquencourt**, internship: *Resolution of Helmholtz Equation with Mixed Spectral Finite-Element Method*
- 2000 - 2001 • **Study project**: *participation to the french robotic cup in 2000 and 2001*
- 2000 (2 momths) • **Motorola, Toulouse**, internship: production line
- Programmation • Writer of *Montjoie* in C++ , code for the resolution of Helmholtz equation and time-Harmonic Maxwell equations with high-order finite element methods, co-writer of *Seldon*, library of linear algebra

## Skills

- Languages • French (mother tongue), English (fluent), German (basis), Spanish (basis)
- Computer Science • C++, C, Python, Fortran 90; parallel computing (MPI); Matlab; Java; L<sup>A</sup>T<sub>E</sub>X

## References

Available upon request. •

## Publications

- M. Bergot, G. Cohen and M. Duruflé *Higher-Order finite elements for hybrid meshes using new pyramidal elements*, accepted to Journal of Scientific Computing
- N. Castel, G. Cohen and M. Duruflé *Discontinuous Galerkin method for hexahedral elements and aeroacoustic*, Journal of Computational Acoustics, vol 17(2), pp 175-196, 2009
- M. Duruflé, P. Grob and P. Joly *Influence of the Gauss and Gauss-Lobatto quadrature rules on the accuracy of a quadrilateral finite element method in the time domain*, Numerical Methods for Partial Differential Equations, vol 25(3), pp 526-551, 2009
- G. Cohen and M. Duruflé *Non Spurious Spectral-Like Element Methods for Maxwell's Equations*, Journal of Computational Mathematics, vol 25, pp 282-304, 2007
- M. Duruflé, H. Haddar and P. Joly, *High Order Generalized Impedance Boundary Conditions in Electromagnetic Scattering Problems*, C. R. Acad. Sci. Paris Ser. Physique, vol 7, pp 533-542, 2006
- M. Clausel, M. Duruflé, P. Joly and S. Tordeux, *A mathematical analysis of the resonance of the finite thin slots*, Applied Numerical Mathematics, vol 56, no 10-11, pp 1432-1449, 2006