

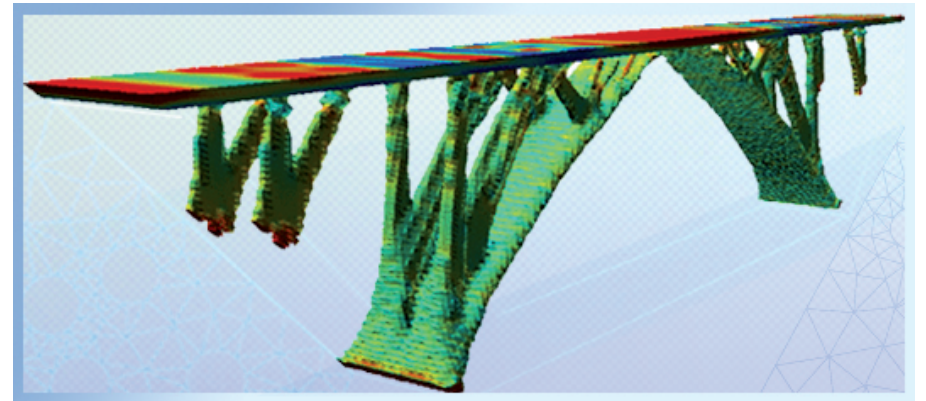


APPLIED MATHEMATICS M2
Specialty : Mathematical Modeling

Administrative information :

Department of Applied Mathematics
Sandra Schnakenbourg
Tel. 01.69.33.46.02
master.map@cmap.polytechnique.fr
<http://www.enseignement.polytechnique.fr/mathematiques-appliquees/>

Masters Program
Hélène Kutniak
Tel. 01.69.33.36.22
helen.kutniak@polytechnique.edu
<http://www.polytechnique.fr/enseignement.master.php>



Professor in charge at Ecole Polytechnique : Grégoire ALLAIRE

Mathematical Modeling

The aim of our mathematical modeling program is to train future engineers and researchers specialized in numerical analysis, scientific computing, control, partial differential equations, optimization and signal processing. Our main goal is to prepare and guide students towards pursuing their training via a PhD in an academic or industrial environment, in traditional fields such as mechanics, physics, engineering sciences, or emerging areas such as biology, economy, and environmental sciences.

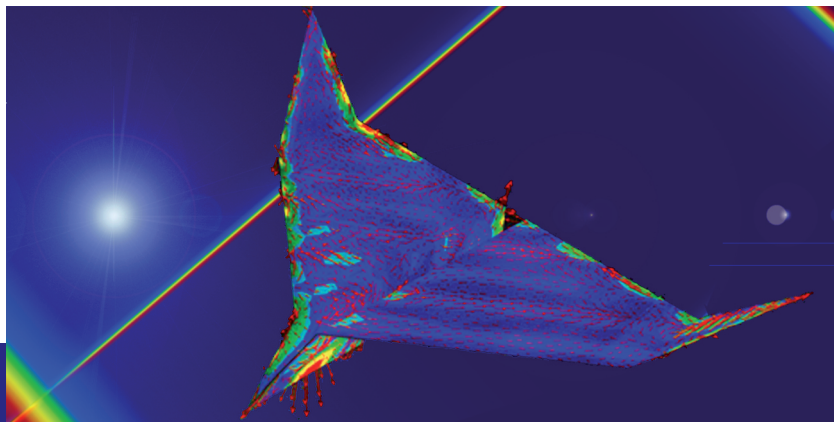
THE MASTER PROGRAM

The courses extend over 4 semesters (2 years and 120 ECTS, 60 ECTS per year). The first or M1 year, is organised around the 3rd year of the "Ingénieur" curriculum. The second year referred to as M2 or advanced specialization year, is jointly organized with one or more partner higher education institutions or universities.

Access to the second year of the programme (M2) is open to students of M1 level or the equivalent, having sufficient grades and French language skills. Each application is studied individually.

Three specialty programs are open to students in their M2 year:

- Partial Differential Equations and Numerical Analysis
- *Professor in charge : Grégoire Allaire*
- Optimization, Game Theory and Modeling in Economy
- *Professor in charge : Sylvain Sorin*
- Mathematics, Vision, Learning
- *Professor in charge : Stéphane Mallat*



INTERNSHIPS

Scientific internships are an ideal opportunity for each student to accomplish in-depth work characterized by theoretical or numerical study carried out in the context of research.

M1 : 11 weeks in length, minimum

M2 : Variable in duration, usually based on a semester.

Organizations offering internships:

- French and international universities (especially partner universities participating in the Erasmus - Socrates program)
- Governmental agencies : CNRS, CEA, INRIA, ONERA, IFP, IFREMER, CEMAGREF...
- Companies such as : Dassault Aviation, EADS, EDF, Michelin, PSA, Renault, Schlumberger, to name a few.

The internship report required by Ecole Polytechnique is an overview presenting the work accomplished by the student during his or her internship.

Ecole Polytechnique does an evaluation of each internship, which takes into account its progress and outcome, written report, and oral defence.