



LMAP

Department of Mathematics and its Applications - Pau, UMR 5142

www.lma-umr5142.univ-pau.fr/live

Staff (Scientific + administrative) : 100

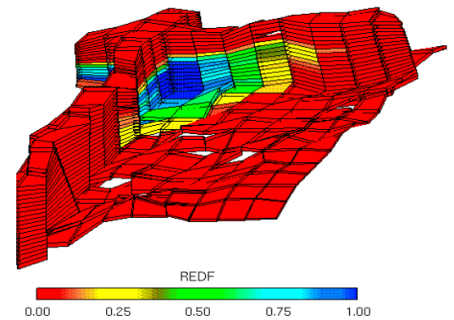
IPRA - Université de Pau et des Pays de l'Adour

Avenue de l'Université BP 1155 - 64013 PAU Cedex

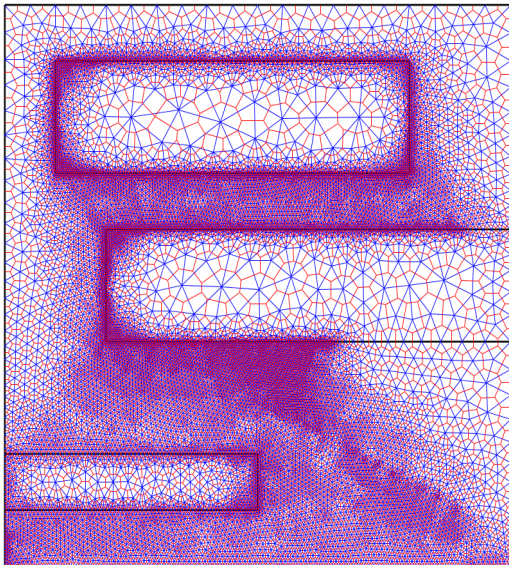
tel: +33 559 407 553

OVERVIEW

The **Laboratory of Mathematics and its Applications of Pau** is part of the CNRS and of the University of Pau and Adour Region. It is a member of the IPRA Federation FR 2952. The department has its own computer facilities, library and administrative structure. The department has four groups covering a broad spectrum in pure and applied mathematics: *algebra and geometry*, *optimization*, *analysis and numerical simulation*, *partial differential equations*, *probability and statistics*.



MAIN RESEARCH AREAS



The department has expertise in four broad areas:

Probability and Statistics:

- *Stochastic modeling, probability,
- *Data analysis, statistical inference.

Algebra and Geometry

- *Algebraic geometry of projective space and low dimensional topology.

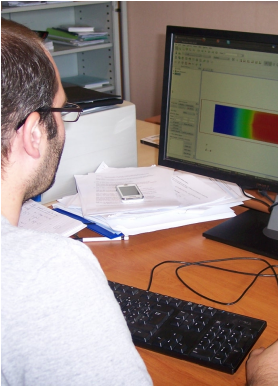
Partial differential equations analysis

- *Non linear partial differential equations and optimization.

Analysis and Numerical Simulation

- *Fluid mechanics, porous media, waves and turbulence,
- *Discretization methods for partial differential equations,
- *Approximation, moving mesh, High Performance
- *Calculation and scientific calculation

MAJOR COLLABORATIONS:



- * **With Inria:** Two local Inria research groups: Magique-3D and Cagire.
- * **Five European projects** (2009-2012): Eeliad, Forge, Impact, Kiai and Tex.
- * **Several international projects:** PROCOPE (Germany), ULYSSE (Ireland), UMI CNRS (Chili, India), ECOS and LIA (Europe-Maghreb).
- * **Three ANR Projects:** AMMSI, GEOLMI and INTERLOW.
- * Participant in **LABEX AMIES**, **MIRA** (Research Consortium on Aquatic Environments).
- * Member of Carnot Institute **ISIFor** (fossil resources engineering).
- * Engaged in the **Avenia** (geosciences) and **Aerospace Valley centres of competitiveness**.
- * **Industrial partnerships:** Alstom, EDF, GDF Suez, Germ'Service, Ifremer, IFP-EN (French Petroleum Institute), SNCF, Total, IRSN (Radiation Protection), Safran/Turbomeca.

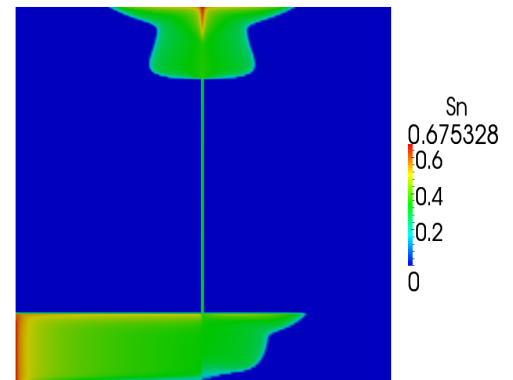
EQUIPMENT:

Computers:

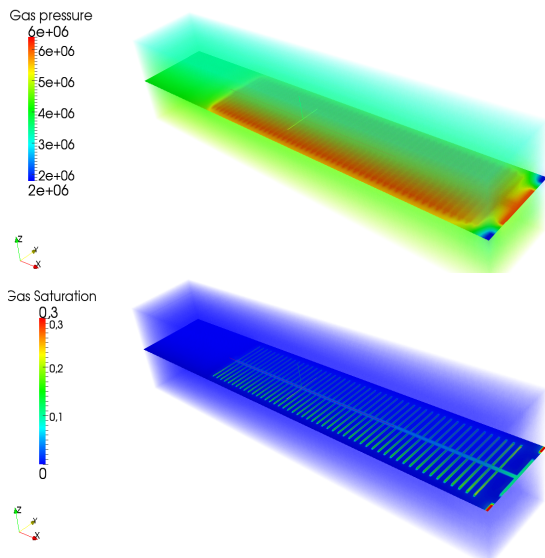
UPPA cluster, Aquitaine Supercomputing Center (MCIA), Plafrim INRIA.

MAVERIC test-bed:

Model for the testing of cooling by controlled injection.



AREAS OF EXPERTISE AND PRODUCTION:



The LMAP produces simulation codes in a variety of areas:

- * Petroleum engineering and reservoir simulation
- * Aerothermodynamics (combustion and cooling)
- * Hydrodynamics and pollutant transportation
- * Reliability and safety in industry
- * Sampling design and quality control
- * Data analysis and statistical methods for decision making
- * Environment and biology

Production:

- * Scientific production : over 350 published articles during 2009-2012
- * Involvement in international projects and industrial partnerships
- * Production of simulation codes