

Multidisciplinary Institute for Applied Research

Presentation

The IPRA Research Federation (FR CNRS-UPPA 2952) gathers the multidisciplinary skills in mathematics, engineering sciences and geosciences of five research units:



- Laboratory of Complex Fluids and their Reservoirs (LFCR),
- Laboratory of Mathematics and their Applications of Pau (LMAP),
- Laboratory for Applied Sciences in Mechanics and Electrical engineering (SIAME),
- Laboratory of Thermal Engineering, Energy and Processes (LaTEP),
- DMEX Centre for X-ray Imaging.

IPRA is a member of:

- the competitiveness cluster **Aven[re]**, which brings together a unique research potential in France in the geosciences sector;
- the Carnot Institute **ISIF[er]**, which aims to support the development of partnership research in the field of sustainable engineering of geo-resources.

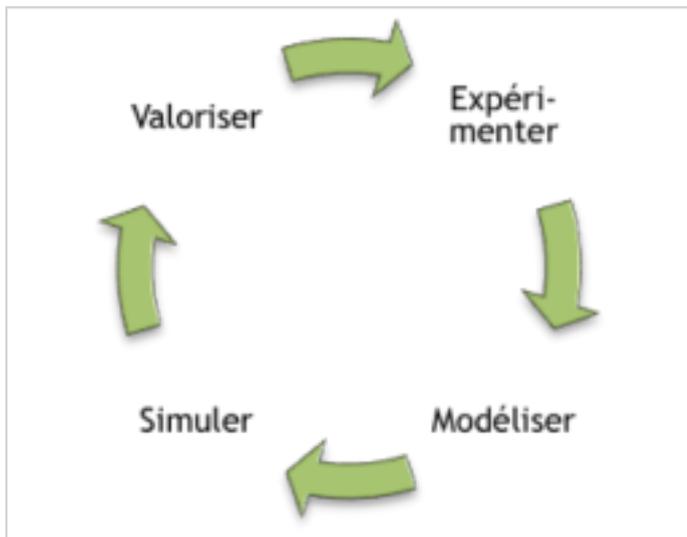
Key Numbers

- * 310 people (among which 160 permanent members)
- * 30 PhD thesis defenses / year
- * 200 publications / year
- * 5 patents / year
- * 1 Joint Industrial Unit with Total

- * 2 Joint Teams with Inria
- * 3 industrial chairs
- * 2 IUF members

Know How

The know-how of the federation is divided into four areas of complementary skills:

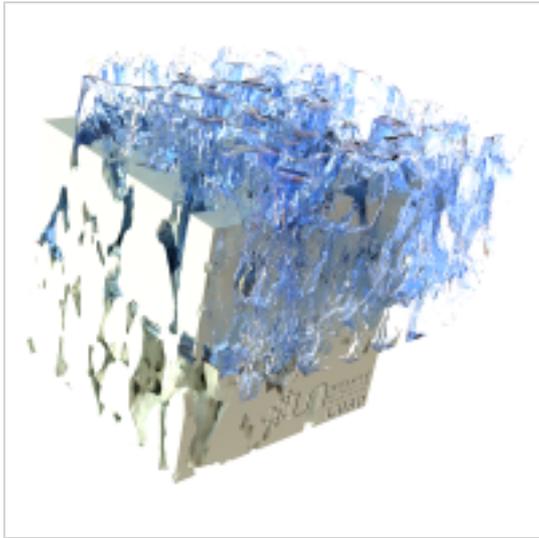


- * experimentation, relying on technological platforms (PVT, pulsed power, metrology, etc.) ;
- * modeling and theoretical understanding of complex physical phenomena;
- * experimental and numerical simulation, to refine and reproduce complex behavioral laws;
- * the valorization of its works through an intense partnership with the socio-economic world.

Strategic development axes

Geo-resources and energy transition

The rarefaction of conventio



nal oil resources does not only encourage to consider new energy sources but also to envisage the exploration and the production of fossil resources in more and more hostile environments. IPRA's laboratories, in partnership with Total and Inria, the Carnot Institute ISIFoR and the competitiveness cluster Avenia, mainly contribute to the exploration and to the sustainable production of subsurface resources as well as to the major issues related to energy transition such as deep geothermal energy or subsurface energy storage.

Aeronautics

The Southern Aquitaine region is an important industrial basin for aeronautics and we take advantage of the presence of major aerospace companies and of the global competitiveness cluster Aerospace Valley. Several laboratories develop cutting-edge research activities with applications in propulsion and reliability engineering.

Environmentally Responsible Buildings



This thriving theme is based on the federation's skills in the field of materials, building energy and infrastructure safety (coastal areas). It is developing particularly in the sectors of rehabilitation, sustainable construction and physical and urban architecture, in partnership with the Institute for Energy Transition [NOBATEK/INEF4](#).

Governance

The governance of the IPRA research federation is organized around an office, made up of the directors and assistant directors of the various units that make it up, and an IPRA council, made up



of 22 members elected or appointed from the researchers, employees in support of research and PhD students. The office meets once or twice a month and the board once or twice a year. The functioning of the IPRA federation is particularly integrated, which leads it for example to arbitrate between its different units for requests for resources from its university supervision. It also has a role of representation of its units within the College Science and Technology for Energy and Environment (STEE) UPPA.

