

WELCOME to XCFD4NRS

**Experiments and CFD Code Applications to
Nuclear Reactor Safety**

**OECD/NEA & IAEA Workshop
Hosted by**

**Commissariat à l'Énergie Atomique (CEA)
Grenoble, France
10 - 12 September 2008**



IAEA

XCFD4NRS

- Link between Simulation and Experiment
- Key topics
 - ✓ Role of V&V and Uncertainty Quantification
 - ✓ Guidelines for the use of CFD
 - ✓ Extrapolation

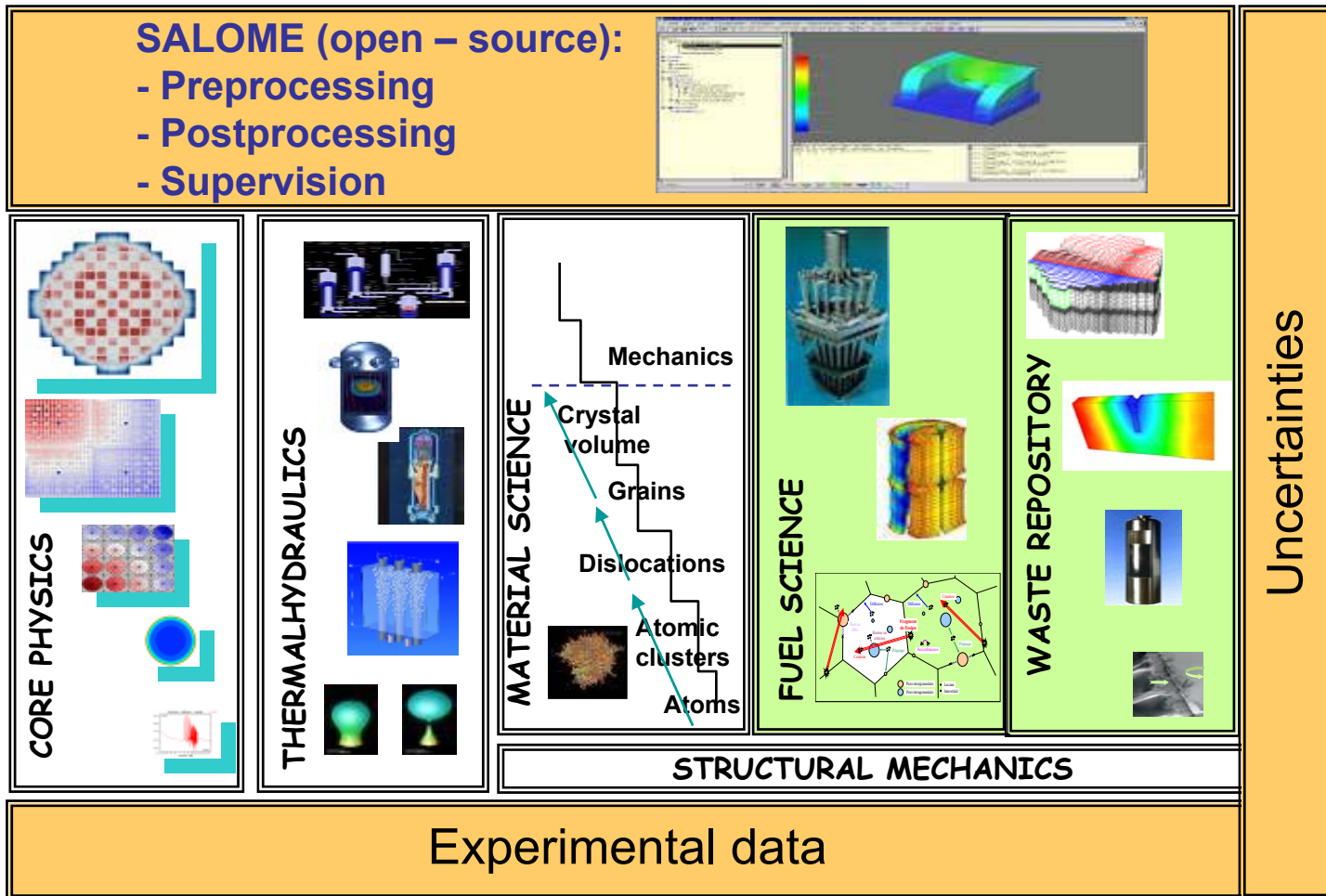
→ Also key topics for the Simulation Program of CEA/DEN (Nuclear Energy Division)

The DEN Simulation Platform for Nuclear Applications

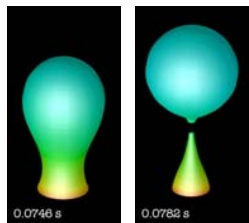


Industrial needs

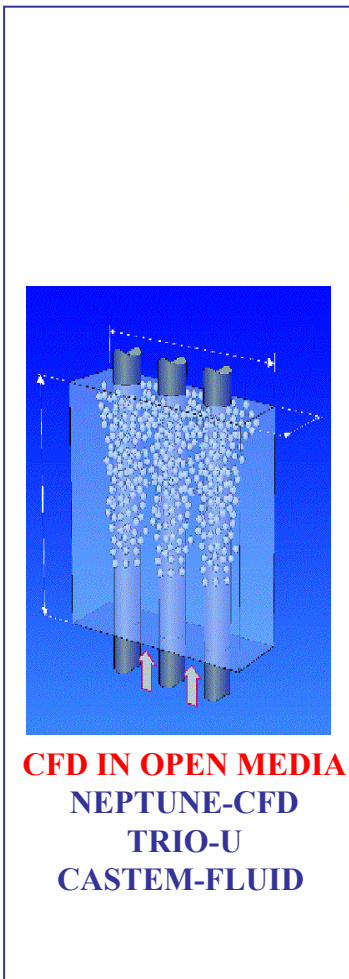
- Multiscale
- Multiphysics
- Multipurpose



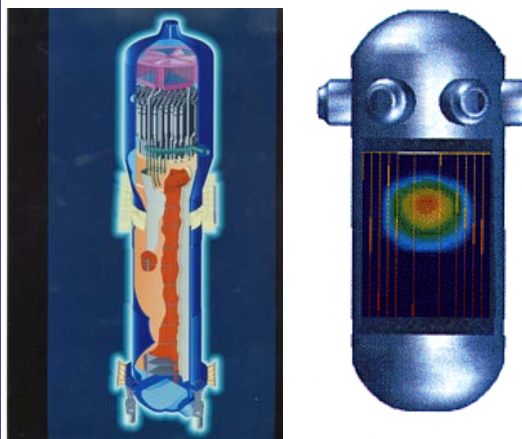
Multiscale developments in Thermal-Hydraulics at CEA/DEN



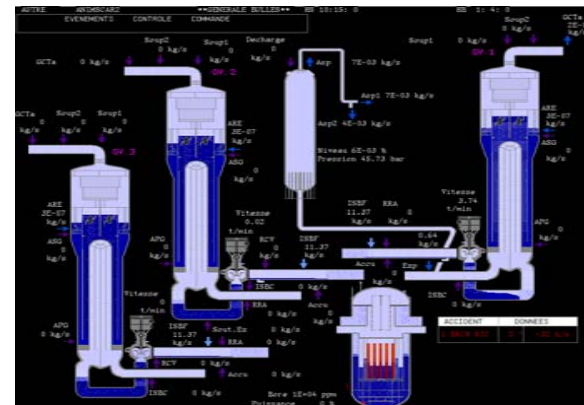
DNS SCALE
TRIO-U
TRITON



CFD IN OPEN MEDIA
NEPTUNE-CFD
TRIO-U
CASTEM-FLUID



CFD IN POROUS MEDIA
FLICA-OVAP



SYSTEM SCALE
CATHARE

The NURESIM Platform (European FP6 and FP7)



- Scope
 - ✓ To develop the next-generation best-estimate, experimentally validated simulation tools for reactor physics (thermal-hydraulics, neutronics, multi-physics, sensitivity & uncertainty analysis) with improved prediction capabilities and robustness
- NURESIM Project (FP6) → NURISP Project (FP7)
18 → 22 participating organizations
- Open Seminar in Madrid, November 27-28th
- <http://www.nuresim.com>



10,500 employees

9 Centres

4 Operational Divisions

Nuclear Energy	Technological Research	Fundamental Research		Defence
		Sciences of Matter	Life Sciences	

