

## **DINOSOARS: a new tool for the Direct Simulation of reacting and two-phase flows**

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Abstract:

Studies relying on Direct Numerical Simulations (DNS) constitute up to now the most valuable approach for investigating fundamental features of turbulent flows, as “numerical experiments”.

They become now increasingly interesting:

for multi-physics problems, in particular in our research group for reacting and multiphase turbulent flows;

for fundamental investigations of practical problems, in particular in a multi-block multi-solver approach.

For both purposes modern high-performance solvers are obviously required, tapping supercomputer resources. This is why a new-generation DNS solver called DINOSOARS has been recently developed in our group. Its basic features will be described during the presentation, together with first examples of applications to reacting and two-phase flows.