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Research Areas:

- Mathematical and numerical modelling of compressible flows
- Modelling and simulation of multicomponent and multiphase flows
- Computational models for hazardous geophysical flows
- Numerical methods for hyperbolic partial differential equations

Which changes affect your scientific area in particular and how do you deal with this challenge in terms of operationalizing changes and predict future developments ?

Climate and environmental changes demand global efforts in the scientific community to work towards sustainable solutions, especially in the exploitation of energy resources. The development and validation of more accurate models, including also uncertainty quantification, contribute to more reliable predictions and therefore to more efficient strategies.

How far does your scientific model help us to develop strategies to face global challenges?

Mathematical and numerical models are powerful tools for both improving our understanding of physical phenomena and for enhancing our prediction capabilities. Scientific computing has an important role in many research fields, from geophysics to biology.

The sinergetic work of mathematicians, numerical analysts and physicians leads to the development of more robust, faster and more reliable simulation methods, which help us to face current and future challenges associated to global changes.