

## Steepest Entropy Ascent models for Non-Equilibrium Thermodynamics, Chemical Kinetics, and Small-Scale Hydrodynamics

The main aim of the project is the development of a new family of models for advanced heat, momentum and mass transport applications as well as combustion and other complex chemical kinetics modeling, based on a novel geometrical approach to non-equilibrium theory that guarantees strong thermodynamic consistency.

An important part of the project is the validation of the model via numerical simulations, comparing the results with those obtained using other kinetic models of the Boltzmann equation.

Furthermore, the model will be used to study phonon transport in graphene or other low-dimensional materials.