UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE
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SEMINARIO di FISICA MATEMATICA

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Approximation of the bi-temperature Euler system in 2 space dimensions

Giovedì 18 novembre 2021, ore **11.00**

Aula F, Plesso di Matematica/Informatica

Abstract: *This lecture is devoted to the numerical approximation of the bi-dimensional bi-temperature Euler system. This model is a non-conservative hyperbolic system, describing an out of equilibrium plasma in a quasi-neutral regime. This system is a non-conservative hyperbolic system, because it contains products of the velocity with a pressure gradient. This cannot be transformed into a divergence form. We develop a second order numerical scheme by using a discrete BGK relaxation model. The second order extension is based on a subdivision of each cartesian cell into four triangles to perform affine reconstructions of the solution. Such ideas have been developed before in the literature for systems of conservation laws. We show how they can be used in our non-conservative setting. The numerical method is implemented and we shall present numerical tests.*

Tutti gli interessati sono invitati a partecipare.

Organizzattrice: Prof.ssa Marzia Bisi