UNIVERSITÀ DI PARMA

DIPARTIMENTO DI SCIENZE MATEMATICHE, FISICHE E INFORMATICHE

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SEMINARIO

CICLO DI SEMINARI BAT-MAT (Biscuits and Tea - Maths)

Dott. **Giorgio Martalò**, ricercatore Università di Parma

Giovedì 31 marzo 2022, **ore 14:30**

Aula B, Plesso di Matematica/Informatica

Singularities in shockwave solutions
of moment equations for gasdynamics

Tutti gli interessati sono invitati a partecipare

Organizzatori: Davide Addona, Paolo Baroni, Nicoletta Tardini

Abstract: *After showing that Navier-Stokes equations do not satisfactorily describe the shock thickness, we analyze and discuss the classical problem of shockwave solutions in the framework of moment equations. Since Grad's work, these models have immediately shown some limitations; in particular, the hyperbolic structure of these equations provides a continuous shock structure up to a certain Mach number, while from this value on the solution exhibits a non-physical discontinuity (sub-shock). To improve such result, other hyperbolic models involving a higher number of moments have been proposed in extended thermodynamics. This approach seems not to allow significant extensions of the Mach number range that guarantees a continuous solution, and the solutions can exhibit additional singularities due to other characteristic speeds. In this talk, by means of a geometrical approach, we want to discuss such singularities for different moment closures.*

Alla fine del seminario verrà offerto un piccolo rinfresco in Common Room.