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# Seminario Matematico di Brescia

## Lan Zhang

School of Mathematics and Statistics  
Wuhan University of Technology

## Weak stability of shock waves for the multidimensional Euler equations

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*Aula Seminari  
DICATAM — Sezione di Matematica  
Università degli Studi di Brescia  
via Valotti 9, Brescia*

### Abstract:

In this paper, we consider the weak stability of shock waves for the multidimensional Euler equations. In the monograph of Majda, he established the uniform stability condition for multidimensional shocks and proved the existence and stability of solutions. Specifically, for pressure obeying the gamma-law, shock profiles are necessarily uniformly stable. For pressure laws that are only monotonically increasing, shock profiles exhibit weak stability. Coulombel established the weak stability and existence of shock waves, yet left the critical case unresolved. This paper will address this open problem.

For information  
and contacts:

[alessandro.morando@unibs.it](mailto:alessandro.morando@unibs.it)  
[paola.trebeschi@unibs.it](mailto:paola.trebeschi@unibs.it)