UNIVERSITÀ DEGLI STUDI DI TRENTO
Dipartimento di Ingegneria Civile, Ambientale e Meccanica

Mechanics of refractory materials at high-temperature for advanced industrial technologies

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MARIE CURIE ACTIONS
PEOPLE

AVVISO DI SEMINARIO

Si comunica che **venerdì 24 ottobre 2014 a partire dalle ore 12.15** si terrà presso l'aula **Q2** (via Mesiano 77) il seguente seminario

Dissipation-induced instabilities in the Taylor-Couette flow of a liquid metal

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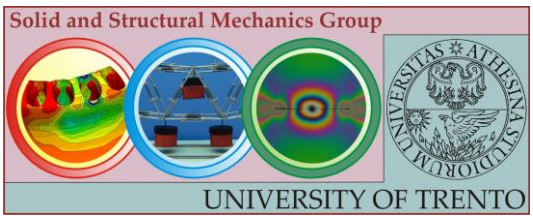
The Taylor-Couette flow of a fluid between two rotating co-axial cylinders is a "hydrogen atom" of fluid mechanics because of the perfect agreement between the theory and experiment. If the fluid is non-viscous, the flow is stable when its angular momentum increases outwards (the Rayleigh criterion, 1917). Viscosity slightly modifies this criterion (Taylor, 1923). The situation dramatically changes when the liquid is electrically conducting, for example when it is a liquid metal: a weak external magnetic field can destabilize the hydrodynamically stable Taylor-Couette flow. This effect known as the magnetorotational instability was discovered in 1959-60 by Velikhov and Chandrasekhar. In 1991 Balbus and Hawley demonstrated the dominance of the magnetorotational instability (MRI) among the possible triggers of turbulence in accretion- and protoplanetary disks. During the last decade MRI is actively studied at the laboratory experiments with the Taylor-Couette flow of a liquid metal. I will talk about recent theoretical and experimental progress in the studies of this remarkable magnetohydrodynamical instability.

Tutti gli interessati sono invitati a partecipare.

Il seminario è organizzato dal gruppo di Scienza delle Costruzioni
(D. Bigoni, L. Deseri, N.Pugno, M. Gei, A. Piccolroaz, F. Dal Corso, M.F. Pantano, R. Springhetti)



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