UNIVERSITÀ DEGLI STUDI DELL'AQUILA

GRAN SASSO SCIENCE INSTITUTE
SCHOOL OF ADVANCED STUDIES
Scuola Universitaria Superiore

PROGRAMME



July 6th - 10th 2026

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COMUNE DELL'AQUILA

IL SEGNO DELLA RINASCITA

L'AQUILA 2026 Capitale italiana della Cultura

DIIIE Dipartimento di Ingegneria Industriale e dell'Informazione e di Economia

6 JULY

Room1 Auditorium

07:30 Registration
08:30 Tea / Coffee
09:00 Opening Welcome
09:45 Nicolas Noiray - Plenary (Chair: ***Eunok Yim***)
10:45 Coffee break

SESSION: **Geophysical, Astrophysical and MHD Flows** Chair: ***Alexander Gelfgat***
11:15 Laurette Tuckerman-Convection in a rapidly rotating spherical shell: Newton's method using implicit Coriolis integration
11:30 Maria Cruz Navarro-Inside the geothermal engine: a numerical study of thermal and structural controls on hydrothermal eruptions
11:45 Jesus Saucedo López-Thermohydrodynamic hysteresis as a regulating mechanism of eruptive alternation in hydrothermal double conduit systems: a numerical study
12:00 Kunal Kamleshbhai Jani-Identification of flow states for the DRESDYN precession experiment using ultrasound Doppler velocimetry
12:15 Caroline Nore-Reduced-order model for magnetic field reversals in simulations of the von Kármán sodium experiment
12:30 Lunch

SESSION: **Classical Hydrodynamic Instabilities** Chair: ***Laurette Tuckerman***
14:00 Keynote: José Eduardo Wesfreid-Henri Bénard (1874–1939): experiments and scientific outreach
14:15 Keynote: José Eduardo Wesfreid-Henri Bénard (1874–1939): experiments and scientific outreach
14:30 Péter Tamás Nagy-Minimal absorbing zones in planar flows
14:45 Alessandro Chiarini-Weakly nonlinear analysis of unstable periodic flows
15:00 Yohann Duguet-Nonlinear dynamics in the Bödewadt layer of a rotor-stator cavity
15:15 Felix Picot-Transient regime of a two phase rotating flow in a cylinder: waves characterisation
15:30 Niccolo Geracitano-Global bifurcation structure of quantum wakes past obstacles of general shape
15:45 Coffee break

SESSION: **Classical Hydrodynamic Instabilities** Chair: ***Edouard Boujo***
16:15 Michael Bestehorn-Dimension reduced model for a two-layer system
16:30 Simeon Djambov-Local and global linear karren instability
16:45 Lester Toledo-Stability of a swirling flow in a turbine draft tube
17:00 Luc Pastur-Bistable flow dynamics of airfoil stall under varying angle of attack: a stochastic model with multiplicative noise
17:15 Atharva Lagwankar-Stability of bluff body wakes: effect of misalignment and ground
17:30 Artur Gesla-Vortex breakdown in a hydroturbine draft tube swirling jet
17:45 Mahbod Mohammadrashidi-Instability of the boundary layer around thin porous airfoils: a weakly nonparallel approach"
18:00 Alessandro Ceci-Finite-amplitude bistability and bifurcation topology in transonic buffet
18:30 **WELCOME RECEPTION**

6 JULY

Room2 Ipogea

10:45 Coffee break

SESSION: **Drops and Bubbles** Chair: ***Rodica Borcia***

11:15 Hasan Yagız Yahsı-Droplet vaporization dynamics of a single bubble in an unbounded liquid under an acoustic field
11:30 Debabrat Biswal-Interface deformation and oscillation of a sessile droplet under a uniform DC electric field
11:45 Louan Presse-Ultrasound-induced Faraday instability on wall-attached microbubbles
12:00 Pedro Sáenz-Collective dynamics of galloping bubbles
12:15 Maria Guadalupe Cabezas-Global linear stability of a bubble rising in the presence of a soluble surfactant
12:30 Lunch

SESSION: **Drops and Bubbles** Chair: ***Pedro Saenz***

14:00 Aliénor Rivière-Deformation and stability of a gas bubble in a biaxial straining flow
14:15 Sergio Rodríguez Aparicio-Effect of ultra-fast surfactants on drop impact onto rough surfaces
14:30 Yunshan Jiang-Bubble-induced transition to disorder in a Hele-Shaw finger
14:45 María Teresa González Rubio-What is the effect of a downstream vertical wall on the rise regime of an isolated bubble in pure water?
15:00 Muhammad Yasir-Rheological effects on the axisymmetric rising of a single bubble
15:15 Mathieu Sellier-Onset of ligament formation at the free surface of a liquid film on a rotating sphere
15:30 Rodica Borcia-Drop propulsion along a vibrating heterogeneous ratchet–structured substrate
15:45 Coffee break

SESSION: **Liquid Films and Interfacial Dynamics** Chair: ***Mathieu Sellier***

16:15 Yotam Stern-Self-lubricated spreading of surfactant-laden droplets
16:30 Nikos Savva-Surrogate modelling and optimization of droplet motion on chemically patterned surfaces via automatic differentiation
16:45 Caroline Purvis-The evaporation of a sessile droplet into a confined atmosphere
17:00 Laurent Duchemin-Leidenfrost levitation of a droplet above a thin liquid film
17:15 Fabien Depoilly-Short-wave linear stability of non-Newtonian fluids down a slope
17:30 Tatiana Gambaryan-Roisman-Influence of the long-scale substrate topography on interface deformation and Bénard–Marangoni instability of evaporating liquid films
17:45 Supriya Karmakar-Falling films over a perforated plane
18:00 Omair Mohamed-Reduced equations for a thin liquid film subjected to solar radiation

6 JULY

Room3 Main lecture hall

10:45 Coffee break

SESSION: **MS: Rigid Bodies to Elastic Sheets/FSI** Chair: ***Yuri Feldman***

11:15 Keynote: Alexander Alexeev-Undulatory locomotion of elastic propulsors with standing and traveling waves
11:30 Keynote: Alexander AlexeevUndulatory locomotion of elastic propulsors with standing and traveling waves
11:45 Sebastian Aland-A combined sharp- and diffuse-interface model for simulation of droplets wetting membranes
12:00 Saichand Chowkampally-Emergence of natural convection beneath a fluid-supported sheet
12:15 Oz Oshri-Snap-induced flow in a closed channel
12:30 Lunch

SESSION: **MS: Rigid Bodies to Elastic Sheets / FSI** Chair: ***Oz Oshri***

14:00 Giuseppe Pucci-Capillary surfers: wave-driven particles on a vibrating fluid interface
14:15 Che-Kai Yang-A revisit of edge effects on the free fall of non-circular plates under controlled initial conditions
14:30 Giovanni Vagnoli-Fluid-structure instabilities needs accurate numerics: a fast and consistent sharp-interface immersed boundary method for moving bodies
14:45 Yuri Feldman-From in-house immersed boundary solvers to OpenFOAM: an implicit framework for FSI
15:00 Jakub Cach-On bifurcations and traction forces on an obstacle in incompressible flow
15:15 Umesh Kumar Patel-Flow-induced vibrations of an elastically-mounted square cylinder with rigid splitter plate
15:30 Ramon Fernandez-Feria-Flutter instabilities of a horizontal flexible plate elastically supported at its leading edge: effects of flexibility and gravity
15:45 Coffee break

SESSION: **Multiphase Flows** Chair: ***Edson Orati Da Silva***

16:15 Nikos Pelekasis-Spreading of a liquid metal coating in the presence of adhesion, Lorentz forces & heat transfer
16:30 Arseniy Parfenov-Instability of two-phase stratified MHD flows
16:45 Alexander Nepomnyashchy-Dynamics and instabilities of floating droplets
17:00 Yakov Nezihovski-Experimental and numerical study of stability of stratified two-phase flows in horizontal and inclined channels of same hydraulic diameters
17:15 Sayali N. Jadhav-From Holmboe instability to finite-amplitude ocean waves: nonlinear evolution of shear-driven capillary–gravity waves
17:30 Kaj Pettersson-Modelling snowflakes using 3D lattice-Boltzmann
17:45 Silvia Hirata-How injected particles modify the onset of Rayleigh–Bénard convection


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