GESELLSCHAFT für
ANGEWANDTE MATHEMATIK und MECHANIK e.V.
INTERNATIONAL ASSOCIATION of APPLIED MATHEMATICS and MECHANICS

# 86th Annual Meeting

of the International Association
of Applied Mathematics and Mechanics

March 23-27, 2015
**Lecce, Italy**

# Book of Abstracts - Extract

# 2015

UNIVERSITÀ DEL SALENTO

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# Scientific Program - Timetable

| Sunday 22 | Time | Monday 23 | Tuesday 24 | Wednesday 25 | Thursday 26 | Friday 27 |
|---|---|---|---|---|---|---|
| | 9:15 | | Contributed sessions (15 in parallel) | Plenary Lecture Moritz Diehl | Contributed sessions (15 in parallel) | Contributed sessions (14 in parallel) |
| | 9:30 | | | | | |
| | 9:45 | | | | | |
| | 10:15 | Registration | | von Mises prize lecture | | |
| | 10:30 | | | | | |
| | 10:45 | | | | | |
| | 11:15 | | Coffee Break | Coffee Break | Coffee Break | Coffee Break |
| | 11:30 | | | | | |
| | 11:45 | | | | | |
| | 12:15 | | Plenary Lecture Thomas Böhlke | General Assembly | Plenary Lecture Ferdinando Auricchio | Contributed sessions (11 in parallel) |
| | 12:30 | | | | | |
| | 12:45 | | | | | |
| | 13:15 | Opening | Lunch | Lunch | Lunch | |
| | 13:30 | | | | | |
| | 13:45 | Univ. Chorus Performance | | | | Closing |
| | 14:15 | Prandtl Lecture Keith Moffatt | Plenary Lecture Enrique Zuazua | Contributed sessions (15 in parallel) | Plenary Lecture Daniel Kressner | |
| | 14:30 | | | | | |
| | 14:45 | | | | | |
| | 15:15 | Plenary Lecture Giovanni Galdi | Plenary Lecture Nikolaus Adams | | Plenary Lecture Stanislaw Stupkiewicz | |
| | 15:30 | | | | | |
| | 15:45 | | | | | |
| Registration pre-opening | 16:15 | Coffee Break | Coffee Break Poster session | Coffee Break | Coffee Break Poster session | |
| | 16:30 | Minisymposia & Young Reseachers' Minisymposia (10 in parallel) | Contributed sessions (14 in parallel) | Contributed sessions (15 in parallel) | Contributed sessions (15 in parallel) | |
| | 16:45 | | | | | |
| | 17:15 | | | | | |
| | 17:30 | | | | | |
| | 17:45 | | | | | |
| | 18:15 | | Public lecture Francesco D'Andria | | | |
| | 18:30 | | | | | |
| | 18:45 | | | | | |
| | 19:15 | Opening reception at Castle of Charles V | | | | |
| | 19:30 | | | | | |
| | 19:45 | | | | | |
| | 20:15 | | | Conference dinner at Hotel Tiziano | | |
| | 20:30 | | | | | |
| | 20:45 | | | | | |
| | 21:15 | | | | | |
| | 21:30 | | | | | |
| | 21:45 | | | | | |

# GAMM 2015

Università del Salento

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# PRL: Prandtl Lecture

Prandtl Lecture

# Discontinuities and topological jumps in slowly evolving vortical flows

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The idea that "vortex lines are frozen" in the flow of an ideal fluid goes back to Helmholtz (1858). However, singular structures such as vortex sheets or filaments are a characteristic feature of such flows, and viscous reconnection of vortex lines can occur in the neighbourhood of such singularities. A model for viscous reconnection suggested by the recent experimental observations of knotted vortex tubes of Kleckner & Irvine (2013) [Nature Phys. 9, 253-258] will be described. A parallel investigation of the response of a soap-film to slow boundary deformation shows that rapid topological jumps can occur here also. The jump of a Möbius-strip soap film from one-sided to two-sided topology provides an intriguing illustration of what is involved in such transitions.

## References

[1] Kimura, Y. & Moffatt, H. K. Reconnection of skewed vortices. J. Fluid Mech. 751, 329-345, (2014).

[2] Goldstein, R. E., McTavish, J., Moffatt, H. K. & Pesci, A. I. Boundary singularities produced by the motion of soap films. Proc. Natl. Acad. Sci. 111 (23), 8339-8344, (2014).