



Summer School on Advanced Research in Turbomachinery (ART)

10-14 July 2017
Florence, Italy

ART 2017

An event organized by the Department of Industrial Engineering (DIEF) of the University of Florence

The school will take place in the Historic Centre of Florence (UNESCO World Heritage Site)

Lectures, organized in both plenary and parallel sessions, will be held by Professors and Researchers from DIEF, who are presently working in the corresponding fields of research

The School will address the most relevant advances in the field of Turbomachinery research, including:

- Turbomachinery aerodynamics
- Aeroelasticity and aeroacoustics
- Heat transfer
- Two-phase flows
- Radial compressors and micro ORC expanders
- Uncertainty quantification
- Wind energy
- Multi-scale modelling

Keynote Speakers:

Prof. C.O. Paschereit (TU Berlin)

Prof. R.I. Issa (Imperial College of London)

A guided tour of the GE Oil & Gas factory and premises will be organized during the week, including a keynote speech given by Dr. V. Michelassi, Chief Consulting Engineer at General Electric.

Welcome to the first Summer School on “Advanced Research in Turbomachinery” (ART)

The school is aimed at providing young engineering professionals with an overview on some of the most relevant issues of the present turbomachinery research.

For each topic, the current state of the art is first presented, both from a theoretical and a technical point of view. Concrete examples of applied research are then presented, with special focus on the latest developments and breakthrough technologies.



Registration fees¹

Early bird registration (before May 10 th , 2017)	€ 490
Standard registration (from May 10 th to July 6 th 2, 2017)	€ 540
Accompanying person ³	€ 100

- ¹ The Registration includes:
- 1) Access to all the plenary and parallel sessions during the 5-day school
 - 2) Conference kit and digital proceedings
 - 3) Welcome cocktail, coffee breaks and lunches (see program)
 - 4) Social dinner
 - 5) “Mathematics in architecture” - Guided walk through Florence city center

² Please note that - due to organizing issues - no registration will be accepted after July 7th, 2017 @ 8:00 p.m. CEST

³ The registration includes only the items listed in points 3), 4) and 5) of the standard registration

Cancellation policy

Before May 10 th , 2017	90% of the registration fee will be reimbursed
From May 10 th to June 10 th , 2017	50% of the registration fee will be reimbursed
After June 10 th , 2017	no reimbursement

The technical program is subject to change. The final program will be released before the registration opening.

Technical program

	Mon, July 10 th	Tue, July 11 th	Wed, July 12 th	Thu, July 13 th	Fri, July 14 th			
09:00 - 09:30	Welcome reception	Session T-A	Session W-A	Session H-A	Session F-A1	Session F-B1		
09:30 - 10:00								
10:00 - 10:30	Opening							
10:30 - 11:00	Keynote K1	Coffee break	Coffee break	Coffee break	Coffee break			
11:00 - 11:30		Session T-B1	Session T-C1	Session W-B1	Session W-C1	Session H-B	Session F-A2	Session F-B2
11:30 - 12:00								
12:00 - 12:30								
12:30 - 14:00	Lunch	Lunch	Lunch	Lunch	Closing ceremony			
14:00 - 14:30	Session M-A	Session T-B2	Session T-C2	Session W-B2	Session W-C2	Guided tour to GE Oil & Gas		
14:30 - 15:00								
15:00 - 15:30								
15:30 - 16:00	Coffee break	Coffee break	Coffee break					
16:00 - 16:30	Keynote K2	Session T-B3	Session T-C3	Session W-B3				
16:30 - 17:00								
17:00 - 17:30								

 General interest (A+B)

 Technical session

 Lunches

 Tour

Side events

Monday, July 10th @ 17:00	Welcome and networking cocktail
Tuesday, July 11th @ 18:30	"Mathematics in architecture" - Guided walk through Florence city center
Wednesday, July 12th @ 17:45	Guided tour of the "Opera del Duomo" museum (not included)
Thursday, July 13th @ 20:30	Social dinner

The technical program is subject to change. The final program will be released before the registration opening.

Keynotes and technical sessions

Session #	Speaker	Title
Keynotes		
K1	Prof. C.O. Paschereit	Recent developments in wind turbine technology
K2	Prof. R.I. Issa	Industrial CFD: a historical perspective
Technical sessions		
Monday, July 10th 2017		
M-A	Dr. A. Bianchini	Advanced aerodynamics in Vertical Axis Wind Turbines
Tuesday, July 11th 2017		
T-A	Dr. S. Salvadori	Uncertainty quantification and robust design
T-B1	Dr. M. Checcucci	Centrifugal compressors design
T-B2	Prof. G. Ferrara	Instabilities in centrifugal compressors: the case of vaneless diffuser rotating stall
T-B3	Prof. D. Fiaschi	Design of mini and micro radial turboexpanders for ORC
T-C1	Prof. R.I. Issa	An overview of computational techniques for modelling multiphase flow
T-C2	Dr. A. Andreini	Advanced two-phase flow modelling
T-C3	Dr. F. Mazzelli	Non-equilibrium condensation in high-speed flows
Wednesday, July 12th 2017		
W-A	Dr. A. Andreini	Gas turbine cooling
W-B1	Dr. L. Pinelli	Turbomachinery noise: numerical methods and applications
W-B2	Dr. F. Taddei	Turbomachinery noise: measurements and data analysis
W-B3	Dr. F. Poli	Turbomachinery aeromechanics: aerodynamically induced vibrations
W-C1	Dr. L. Mazzei	Conjugate heat transfer modelling
W-C2	Dr. M. Insinna	Unsteady component interaction
Thursday, July 13th 2017		
H-A	Prof. R. Pacciani	Transition modelling in turbomachinery - Part 1
H-B	Dr. M. Marconcini	Transition modelling in turbomachinery - Part 2
Friday, July 14th 2017		
F-A1	Dr. L. Ferrari	Dynamic pressure measurements in turbomachinery applications
F-A2	Dr. A. Picchi	Experimental methods for gas turbine heat transfer investigation
F-B1	Dr. A. Andreini	Gas turbine combustors
F-B2	Dr. D. Chiaramonti	Biofuels production and use in gas turbine combustion

The technical program is subject to change. The final program will be released before the registration opening.