

# International Workshop on Uncertainty Quantification and Design Optimization

## Workshop Scope

The aim of the workshop is to discuss various cutting edge techniques of Uncertainty Quantification and Design Optimization through invited lectures and contributed talks. Since “uncertainty” is one of key terms in numerical research, the workshop is mainly focused on how to handle uncertainty in various fields. The maturity and limitation of the techniques will be discussed to facilitate the technology development. In addition, the workshop aims to encourage continued research in the field and to apply the techniques to practical problems.

## Date

February 25, 2013 (9:00-17:30)

## Workshop Venue

Sala Baroncini - Assicurazioni Generali SpA - Via Trento 8, Trieste, Italy

## Organizers

Prof. Carlo Poloni (University of Trieste)

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## Registration

The workshop is free of charge but a registration is mandatory. Please contact Roberta and Silvia at Smile Tech (Email: info@smileservice.it, Tel. +39 040 348 16 31, Fax. +39 040 348 70 23) by February 10<sup>th</sup> if you wish to participate in the workshop.

## Sponsors

\* Tohoku University of Global COE Program

“World Center of Education and Research for Trans-disciplinary Flow Dynamics”

\* University of Trieste

\* ESTECO (Italy)

\* Center for Next-generation Aircraft (Tohoku University)

\* KIT Aeronautics Laboratory (Kanazawa Institute of Technology)

### Invited Speakers

Prof. George Karniadakis, Brown University, USA

Prof. Charles Hirsch, VUB/Numeca International, Belgium

Dr. Domenico Quagliarella, CIRA, Italy

Prof. Massimiliano Vasile, University of Strathclyde, UK

Prof. Pietro Congedo, INRIA, France

Dr. Bojan Niceno, PSI, Switzerland

### Accommodation

Hotel booking, travel and logistic information:

Please contact Smile Tech ([info@smileservice.it](mailto:info@smileservice.it))

<http://www.smileservice.it/> Tel. +39 040 348 16 31 Fax. +39 040 348 70 23

### Post-Proceeding

The presentation will be delivered as post-proceeding to the speakers.

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## Program

9:00-9:15	Welcome to the Workshop
9:15-10:00	“Optimization Under Uncertainty Using the Generalized Inverse Distribution Function” Dr. Domenico Quagliarella, CIRA, Italy
10:00-10:45	“Prospects and Challenges for Industrial Applications of Uncertainty Quantification and Robust Design” Prof. Charles Hirsch, VUB/Numeca International, Belgium
10:45-11:00	Coffee break
11:00-10:45	“Uncertainty Quantification in CFD Simulations of Isokinetic Turbulent Mixing Layers” Dr. Bojan Niceno, PSI, Switzerland
11:45-12:30	“Evidence-Based Robust Optimisation Applied to Space System Engineering” Prof. Massimiliano Vasile, University of Strathclyde, UK
12:30-14:00	Lunch
14:00-14:45	“New Methods for Nonlinear Stochastic PDEs” Prof. George Karniadakis, Brown University, USA
14:45-15:30	“Uncertainty Quantification and Robust Design in Complex Flow Simulations” Prof. Pietro Congedo, INRIA, France
15:30-15:45	Coffee break
15:45-16:15	“Direct and Inverse Multi Objective Robust Design” Prof. Carlo Poloni, University of Trieste / ESTECO, Italy
16:15-17:00	“Toward Large-Scale Design Optimization Based on Building-Cube Method” Dr. Daisuke Sasaki, Kanazawa Institute of Technology, Japan, Dr. Takashi Misaka, Tohoku University, Japan Prof. Shigeru Obayashi, Tohoku University, Japan
17:00-17:15	Discussions & Closing Remarks
20:00-	Gala Dinner

