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## Editorial

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**Biographical notes:** Bruno Chanetz is a Research Engineer at Onera in 1983, Head of Hypersonic Group in 1990, Head of Hypersonic Hyperenthalpic Project in 1997, Head of Experimental Simulation and Physics of Fluid Unit in 1998 and Deputy Director of the Fundamental and Experimental Aerodynamics Department in 2003. Since 2000, he has been a Master of Research, Level 2 at Onera. Since 2009, he has been an Associate Professor at the University Paris-Ouest. He is also a member of the Aerodynamic Committee of the 3AF Society.

Jean Délerly has been the Director of the DAFE at Onera until 2003. He is currently an Emeritus Advisor for this department, Chairman of the Aerodynamics Commission of the 3AF (French Aeronautics and Astronautics Society), Chairman of the Scientific Committee of the National Centre for Technological Research in the field of aerodynamics and aeroacoustics of land vehicles.

Abderrahmane Baïri is a Professor at the University Paris-Ouest. His main teaching activity in Thermal and Energy Engineering Department (GTE) is related to heat transfer and engineering numerical methods. His research is performed in Laboratoire de Thermiques, Interfaces et Environnement (LTIE).

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The International Symposium of Applied Aerodynamics is organised each year by the French Aeronautics and Space Society (3AF) in a different venue in France known for its activities in the domain of aeronautics and/or space. The symposium is an excellent opportunity for scientific exchanges among the aerospace community where aerodynamicists from industry, research institutions and academics meet. Scientists and engineers from other

domains involving fluid mechanics are also welcome. The symposium concentrates each year on a different topic representative of the present concerns in the field of aerodynamics.

In 1909, Gustave Eiffel built at the foot of his famous tower one of the first wind tunnels dedicated to a new science: aerodynamics. In 1912, the wind tunnel was moved to Auteuil, in Paris, where it is still in operation. In 2012,

the French aerodynamics community celebrates the centenary of the Eiffel wind tunnel and its continued use for the study of a large number of aerodynamic problems concerning aircraft, automobiles, buildings, etc. The *47th International Symposium of Applied Aerodynamics*, placed under the auspices of this celebration, has focused on today strategy used for performance predictions and detailed flow analysis. This includes intensive use of CFD in connection with wind-tunnel experiments aiming to assessing the accuracy of computations, investigating the physics of complex flows and improving theoretical models. The symposium has also considered the close connection between wind-tunnel operation and CFD within the context of a *computer aided wind tunnel*. The symposium held in Paris was hosted by the engineering school Arts et Métiers – ParisTech, which the symposium organisers greatly acknowledge for its precious help.

The symposium was organised into sessions respectively considering the following items: wind tunnel operation, improvement and development, computer aided wind tunnel, advanced measurement techniques, processing and calibration methods, computations and validation (with special sub-sessions about transition and instabilities, propulsion, wind turbines/propellers), cooperative CFD and wind tunnel for aerodynamics design, fundamental experiments and CFD for flow control, experiment and validation for applications.

In 2012, the symposium has known an unusual success, due to the rather broad and important theme and its location. The number of attendees has exceeded 100, with presentation of 60 papers including contributors from Algeria, Belgium, Spain, France, Germany, Netherlands, Japan, Russia, Serbia, UK and the USA. The present special issue of the *International Journal of Engineering Systems Modelling and Simulation* devoted to the *47th International Symposium of Applied Aerodynamics* presents a selection of 13 articles prepared by contributors and giving an overview of the major advances in the field covered by the symposium.

The next *3AF International Symposium of Applied Aerodynamics* will focus on specific problems encountered in the aerodynamic design and performance prediction of small objects such as micro air vehicles, projectiles and flow control devices. The subject also includes difficulties caused by small discontinuities or defects on the body leading to parasitic drag and noise generation. Such small defects can compromise any attempt to decrease drag by laminarity control. The influence of geometrical details, such as technological effects in turbomachinery or suppress detailed helicopter rotor head, is also important.

The 48th symposium will be held at Saint-Louis, France, from March 25 to March 27, 2013.