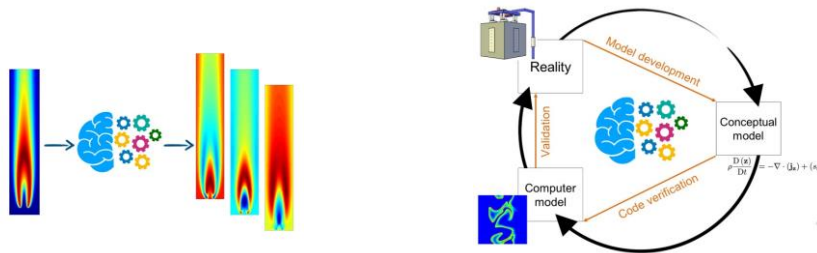




ERCOFTAC Course:

**Best Practices Guidelines for CFD of Turbulent Combustion
including an introduction to machine learning tools for chemistry reduction and
error estimation.**

Université Libre de Bruxelles, Avenue Franklin Roosevelt 50, 1050 Bruxelles



PROGRAMME:

Wednesday, December 11, 2019

**Day 1: Best practices guidelines for CFD of turbulent combustion & introduction
to data-driven approaches**

8:30	<i>Registration and welcome</i>	
9:00	Basis of turbulent combustion modeling	Luc Vervisch
10:00	Modeling pollutant emissions and NOx reduction	Luc Vervisch
10:30	<i>Refreshments</i>	
11:00	Validation of CFD models for conventional and MILD combustion	Dirk Roekaerts
12:00	Discussion	
12:30	<i>Lunch</i>	
13:30	Validation of CFD models for turbulent combustion of sprays	Dirk Roekaerts
14:30	Introduction to use of machine learning in combustion	Alessandro Parente
15:30	<i>Refreshments</i>	
16:00	Examples of feature extraction, regression and model reduction for combustion applications	Alessandro Parente
17:00	Final discussion	
17:30	<i>Close</i>	

Evening: course dinner

Thursday, December 12, 2019

Day 2: CFD for physics-informed, data-driven models in combustion

8:30 *Registration and welcome*

9:00 Machine-learning based techniques for error estimation in combustion modelling **Heinz Pitsch**

10:00 Improving the fidelity of turbulent combustion simulations using machine learning **Heinz Pitsch**

11:00 *Refreshments*

11:30 Chemistry reduction in combustion simulations using unsupervised classification and mechanism reduction I **Alberto Cuoci**

12:30 *Lunch*

13:30 Chemistry reduction in combustion simulations using unsupervised classification and mechanism reduction II **Alberto Cuoci**

Mini workshop on combustion CFD applications:

14:30 Participants and lecturers are invited to give a short presentation on a combustion CFD application using the CFD tools of their interest, with emphasis on challenging issues. The discussion will focus on which best practices can be identified for the presented cases. **Alessandro Parente**

16:00 *Final conclusions and closure*

Participation fee:

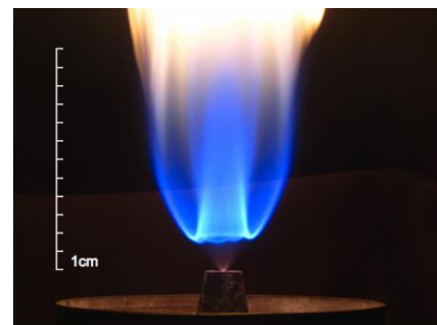
ERCOFTAC Members: €400

ERCOFTAC Members (PhD students): €300

Non-members: €900

The following cancellation charges apply:

- 90 days prior event - 30% of the fee per person;
- 60 days prior event - 50% of the fee per person;
- 30 days or less prior event - full fee per person.



TO REGISTER: Please send your details to: admin@cado-ercoftac.org or visit [ERCOFTAC website](#):

DEADLINE FOR REGISTRATION: 1st December 2019