



CoEC Combustion Autumn School 2022:

Combustion theory with ML/AI applications and interactive analysis

October 24-26, 2022

[Shipka Conference Hall, Crystal Palace Boutique Hotel](#), Sofia, Bulgaria

TENTATIVE PROGRAMME

Day 1, October 24, 2022	
09:00 - 09:30	Registration
09:30 -10:30	Chemical kinetics in flames: general description and how to handle it in computations Dr. Benedicte Cuenot , <i>CERFACS, France</i>
10:30 - 11:00	BREAK
11:00 - 12:00	Turbulent combustion modeling in LES: methods and applications Dr. Benedicte Cuenot , <i>CERFACS, France</i>
12:00 - 13:30	LUNCH BREAK
13:30 - 14:30	Soot formation in laminar and turbulent flames_Part1 Dr. Federica Ferraro , <i>Technical University of Darmstadt, Germany</i>
14:30 - 15:00	BREAK

15:00 - 16:00	Soot formation in laminar and turbulent flames_Part2 Dr. Federica Ferraro , <i>Technical University of Darmstadt, Germany</i>
16:00 - 16:30	BREAK
16:30 - 17:30	Multiphase combustion of solid fuels – applications, methodologies and challenges Dr. Swagnik Guhathakurta , <i>Eindhoven University of Technology, Netherlands</i>
Day 2, October 25, 2022	
09:30 - 10:30	Multiphase combustion of solid fuels – results and future work Dr. Swagnik Guhathakurta , <i>Eindhoven University of Technology, Netherlands</i>
10:30 - 11:00	BREAK
11:00 -12:00	HPC algorithms for combustion simulation_Part1 Dr. Leonardo Pachano , <i>BSC, Spain</i>
12:00 - 13:30	LUNCH BREAK
13:30 - 14:30	HPC algorithms for combustion simulation_Part2 Dr. Leonardo Pachano , <i>BSC, Spain</i>
14:30 - 15:00	BREAK
15:00 - 16:00	Introduction to Deep Learning, Convolutional Neural Networks and Transfer Learning of Deep Neural Networks. Part I Dr. Kristina Kapanova , <i>NCSA, Bulgaria</i>
16:00 - 16:30	BREAK
16:30 - 17:30	Introduction to Deep Learning, Convolutional Neural Networks and Transfer Learning of Deep Neural Networks Part II Dr. Kristina Kapanova , <i>NCSA, Bulgaria</i>
Day 3, October 26, 2022	
09:30 - 10:30	ML and data driven modeling for turbulent reacting flows_Part1 Dr. Temistocle Grenga , <i>Institute of Combustion Technology (ITV) - RWTH Aachen University, Germany</i>
10:30 - 11:00	BREAK
11:00 -12:00	ML and data driven modeling for turbulent reacting flows_Part2

	Dr. Temistocle Grenga , <i>Institute of Combustion Technology (ITV) - RWTH Aachen University, Germany</i>
12:00 - 13:30	LUNCH BREAK
13:30 - 14:30	Interactive HPC with Jupyter: Introduction and Customization Jens Henrik Göbbert , <i>Juelich, Germany</i>
14:30 - 15:00	BREAK
15:00 - 16:00	Interactive HPC with Jupyter: JupyterLab on HPC resources Jens Henrik Göbbert , <i>Juelich, Germany</i>
16:00 - 16:30	BREAK
16:30 - 17:30	Interactive HPC with Jupyter: Hands-on session Jens Henrik Göbbert , <i>Juelich, Germany</i>