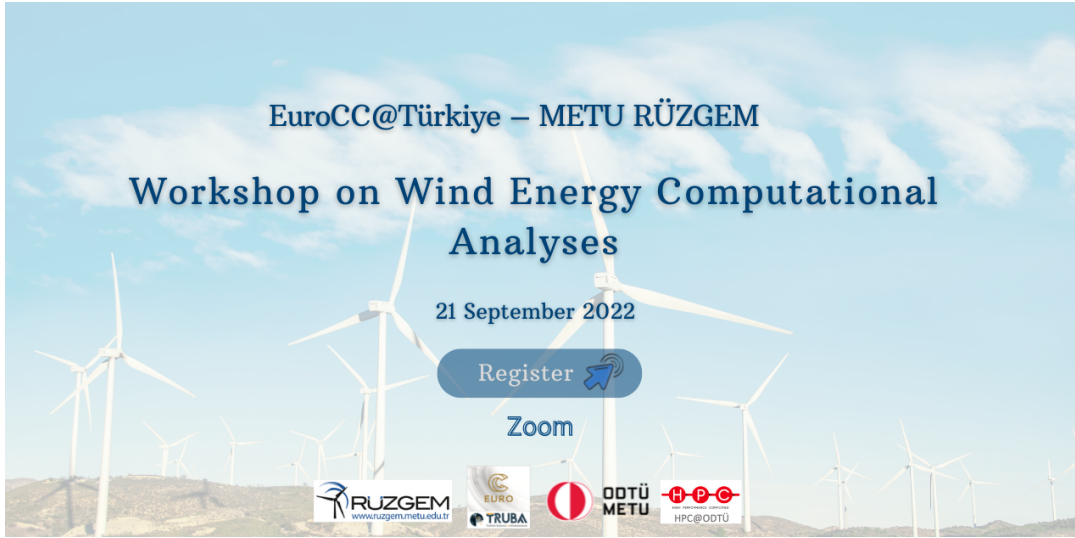


EuroCC Türkiye – METU RÜZGEM Workshop on Wind Energy Computational Analyses

Wednesday 21 Sep 2022, 08:55 → 18:00 Europe/Istanbul
Zoom

Description



Wind energy, being one of the renewable energy sources, is utilized through the use of onshore or offshore wind turbines in wind farms. Examples for the computational analysis of wind turbines are introduced in this introductory level workshop for aerodynamic and hydrodynamic analyses of wind turbines. Flow field simulations and wake analyses for wind farms are also presented and discussed. The computational simulations are done by using open source software. SU2 flow solver is used for Computational Fluid Dynamics simulations of flow fields around wind turbine airfoils and rotors. OpenFOAM flow solver is used for Computational Fluid Dynamics simulations of wind farm flow fields, and OpenFAST code is used for onshore/offshore wind turbine aerodynamic/hydrodynamic modeling and analyses. The selected computational test cases and how to run these cases on TRUBA HPC infrastructure are briefly presented.

Content:

Aerodynamic Analyses

- **Introduction to Wind Turbine Aerodynamics** (Assoc. Prof. Dr. Nilay Sezer Uzol)
- **Wind Turbine Airfoil CFD Analyses by using SU2** (Ezgi Orbay, Ezgi Aslan, Assoc. Prof. Dr. Nilay Sezer Uzol)
- **Wind Turbine Rotor CFD Analyses by using SU2** (Ali Ata Adam, Ezgi Orbay, Assoc. Prof. Dr. Nilay Sezer Uzol)

Design Analyses

- **Introduction to Offshore Wind Turbine Design** (Assoc. Prof. Dr. Elif Oğuz)
- **Offshore Wind Turbine Aerodynamic and Hydrodynamic Analyses by using OpenFAST** (Muhammad Juanda Putra, Assoc. Prof. Dr. Elif Oğuz, Assoc. Prof. Dr. Nilay Sezer Uzol)

Wind Farm Analyses

- **Introduction to Wake Models and Wind Farm Analyses** (Assoc. Prof. Dr. Nilay Sezer Uzol, Ali Ata Adam, Hüseyin Can Önel)
- **Wind Farm CFD Analyses by using OpenFOAM** (Hüseyin Can Önel)

Language

English

Acknowledgements



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Lithuania, Latvia, Poland, Portugal, Romania, Slovenia, Spain, Sweden, the United Kingdom, France, the Netherlands, Belgium, Luxembourg, Slovakia, Norway, Switzerland, Turkey, Republic of North Macedonia, Iceland, Montenegro.



EuroCC Turkey Social Media Accounts::

https://twitter.com/EuroCC_Turkey

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More information about METU RÜZGEM (METU Center of Wind Energy) can be found below.



ODTU_RUZGEM.pptx

Contact

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09:30	→ 10:25	Introduction to Wind Turbine Aerodynamics ⌚ 55m
		Speaker: Dr Nilay Sezer Uzol (Middle East Technical University)
10:25	→ 11:20	Wind Turbine Airfoil CFD Analyses by using SU2 ⌚ 55m
		Speakers: Ezgi Orbay (Middle East Technical University) , Ezgi Aslan, Dr Nilay Sezer Uzol (Middle East Technical University)
11:20	→ 11:30	Coffee Break ⌚ 10m
11:30	→ 12:25	Wind Turbine Rotor CFD Analyses by using SU2 ⌚ 55m
		Speakers: Ali Ata Adam (Middle East Technical University) , Ezgi Orbay (Middle East Technical University) , Dr Nilay Sezer Uzol (Middle East Technical University)
12:25	→ 13:15	Lunch Break ⌚ 50m
13:15	→ 14:10	Introduction to Offshore Wind Turbine Design ⌚ 55m
		Speaker: Dr Elif Oğuz (Middle East technical University)
14:10	→ 15:05	Offshore Wind Turbine Aerodynamic and Hydrodynamic Analyses by using OpenFAST ⌚ 55m
		Speakers: Muhammad Juanda Putra (Middle East Technical University) , Elif Oğuz (Middle East Technical University) , Dr Nilay Sezer Uzol (Middle East Technical University)
15:05	→ 15:15	Coffee Break ⌚ 10m
15:15	→ 16:10	Introduction to Wake Models and Wind Farm Analyses ⌚ 55m
		Speakers: Ali Ata Adam (Middle East Technical University) , Hüseyin Can Önel (Middle East Technical University) , Dr Nilay Sezer Uzol (Middle East Technical University)
16:10	→ 17:00	Wind Farm CFD Analyses by using OpenFOAM ⌚ 50m
		Speaker: Hüseyin Can Önel (Middle East Technical University)