

Water management of vehicles with MESHFREE

Virtual course for advanced users

<https://www.meshfree.eu/en/events.html>



Course content

Participants will learn how MESHFREE can be used to simulate and analyze the paths water takes during water crossing of a vehicle or when it is exposed to rain.

Lectures for all participants and practical exercises in small groups alternate. The following topics will be elaborated.

- Movement of geometrical parts (driving movement of a car, fluid-structure-interaction)
- Anisotropic porosity for engine compartment components
- Generation of droplets
- Options for performance enhancement (adaptive refinement of flow domain, feeder-cutter-principle)
- Postprocessing options (evaluation of forces, volume fluxes, wetted components)
- *Options for 2-phase water-air-simulations (depending on the progress during the course)*

Prerequisites

Successful completion of the "Introduction to MESHFREE" course or the "Getting Started > Basics" in the MESHFREE documentation is a mandatory prerequisite for this course.

Technical aspects:

- Participants need a PC or laptop with (integrated) webcam as well as microphone and loudspeakers (a headset would be optimal).
- MESHFREE as well as ParaView have to be installed on the participants' PC or laptop in a Linux-based system (real or virtual machine).
MESHFREE is currently compiled on Red Hat Enterprise Linux 7. It has been successfully tested on the following operating systems: Red Hat Enterprise Linux 7, Ubuntu 20.04 LTS, Debian stable (version 10).

Video conference tool

We will use MS Teams as means of communication. For this, we will create a team solely for this course that participants will be added to by mail address. Specific topics and questions can be discussed in separate channels if needed.

Course language

English

Course instructor

MESHFREE team (Fraunhofer ITWM)

Course duration

Two half days of training, each from 9:00 to 13:00.

All times in UTC+2:00 from last Sunday in March to last Sunday in October, UTC+1:00 from last Sunday in October to last Sunday in March.

Registration

Participation is limited. Please register bindingly via mail to support@meshfree.eu up to two weeks before the course date.

Please note that export control must be carried out for non-German participants/organizations.

Course fees

None

Keep up to date on the planning of future courses without obligation via the following mailing list:
<https://listserv.itwm.fraunhofer.de/mailman/listinfo/meshfree-training-interest>