THE DLR THERMOFLUID STREAM COMMUNITY EVENT

Online Meeting. 19.06.2024 / Dirk Zimmer

Why?

For us:
to get to know our user-base.

For new users:
to learn about the library

For existing users:
to learn about new features

<u>For us all:</u>
to form a community and help each other!

Authors and Contributors

The Library is provided by the DLR Institute of System Dynamics and Control.

DLR Deutsches Zentrum für Luft- und Raumfahrt
German Aerospace Center

Deutsches Zentrum für Luft- und Raumfahrt, Institut für Systemdynamik und Regelungstechnik, Münchener Strasse 20, 82234 Wessling-Oberpfaffenhofen, Germany
Individual authors of this organization are:

- @dzimmer
- @RaphaelGebhart
- @nieweber

Further Notable Contributions

We are very grateful to @IngelaLind from Saab Aeronautics, Linköping, Sweden for all models regarding static head pressure as well as media models for liquid and gas mixtures.

SAAB

We want to express our gratitude to Peter Stein and Philipp Jordan from HTWG Konstanz for their pipe models based on Idelchik.

We would like to thank very much @wischhusen from XRG Simulation GmbH for additional open-source Media models such as R1234yf.

XRG Simulation GmbH

Alumni

- @mimeissner

Logistics

- Please send your slides (for instance as PDF) to dirk.zimmer@dlr.de after the event. We want to provide them to everyone.

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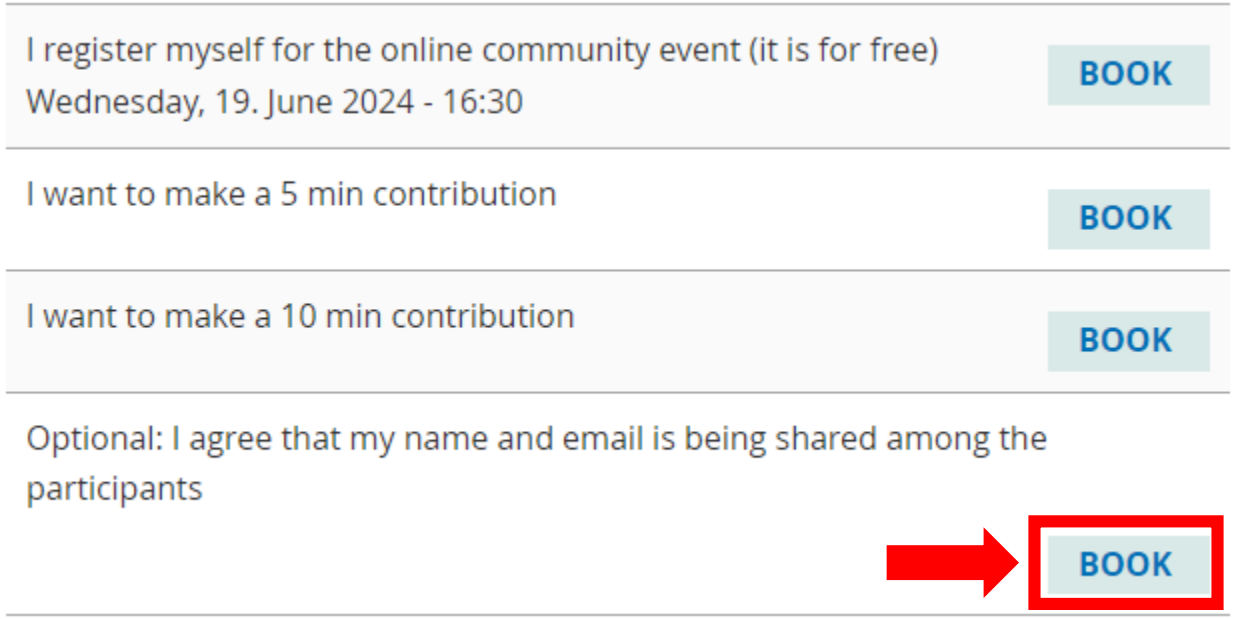


Agenda

- Please stay in time

- We appreciate that you choose us over the European Soccer Championship ☺

Time	Speaker	Programm
16:30	Dirk Zimmer, Raphael Gebhart	**Welcome and Introduction**
16:40		**Application Examples**
	Julian Formhals (Vattenfall)	Simulation of District Heating Grids for Operational Optimization
	Peter Junglas (PHWT)	Teaching Thermodynamic Cycles
	Corentin Lepais	Using TFS for modeling Aircraft Enviornmantal Control Systems
16:55	**All**	**Round Table to introduce participants**
17:15		**New Interfaces and Compatibility**
	Francesco Casella (Poli. Milano)	Open Modelica Compatibility
	Dag Brück (3ds)	Better Simulation Code for TFS in Dymola
	Niels Weber	Interfaces to TIL media models
17:30		**Break**
17:40		**New Components**
	Peter Stein, Philipp Jordan (HTWG)	New Pipe Models
	Raphael Gebhart	Improved Pump Models
17:55		**New Features**
	Ingela Lind (Saab)	Adding dynamic gravity for tanks
	Peter Eschenbacher	New HX Models for 2-Phase Cooling
18:10	**All**	**Round Table on future development**
18:30		**End of Community Event**

Further upcoming improvements

- Peter‘s Heat Exchanger will be included in main branch
  https://github.com/nieweber/ThermofluidStream/tree/physicalApproachHEX

- MSL Update will re-align TFS with Modelica.Media and External Media.

- Update to volume model to avoid non-linear equation systems
  (will have to check with OM before though…)

Next Events

- **TFS Presentation**
  submitted for the ThermoSim 2024 in Munich. 09.-10.September
  ltx.de/thermosim/2024/

- **TFS Tutorial**
  will be submitted for the Asian Modelica Conference this December in South Korea
  https://modelica.org/events/asian2024/

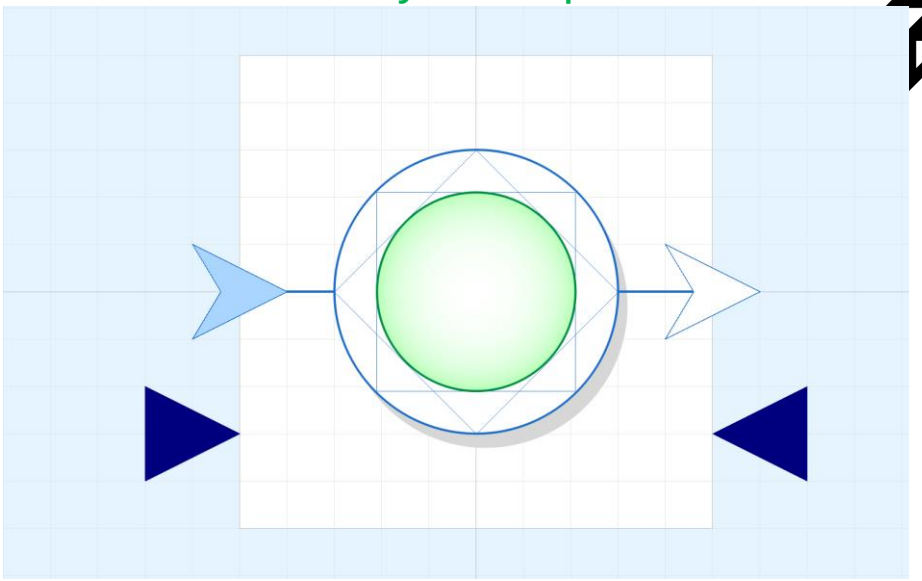
- **Next TFS Community Event**
  Proposal: Before or after Chinese New Year around Lunch Time (in Europe, evening in Asia)

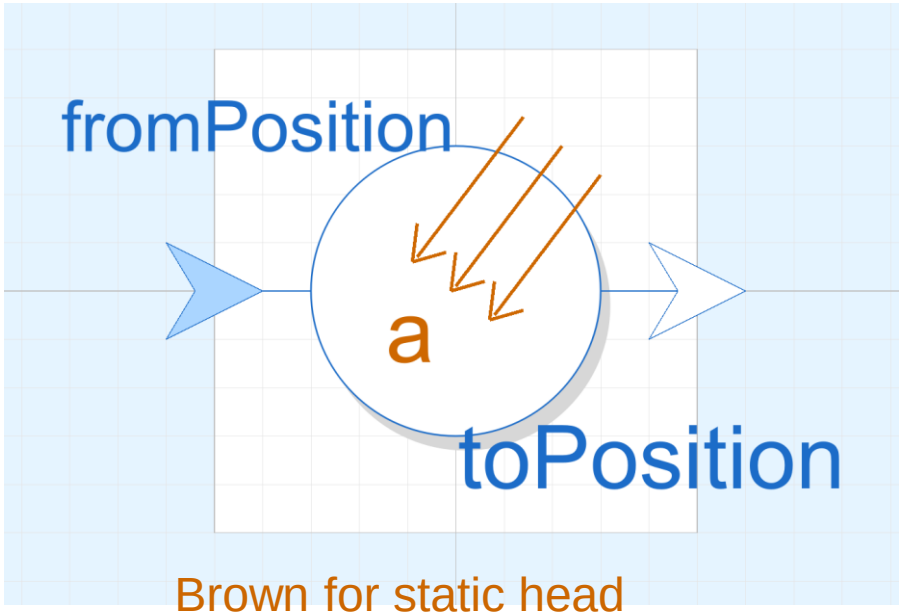
- **Stay in Contact:** Help each other via GitHub

Plans for the Future

- Static Head and Tanks
- Stratified Tanks
- Water Extractors and Injectors
- Good place for specialized models such as hydraulic Turbines for HTWG
- Anything more…

Green for dynamic pressure





Brown for static head

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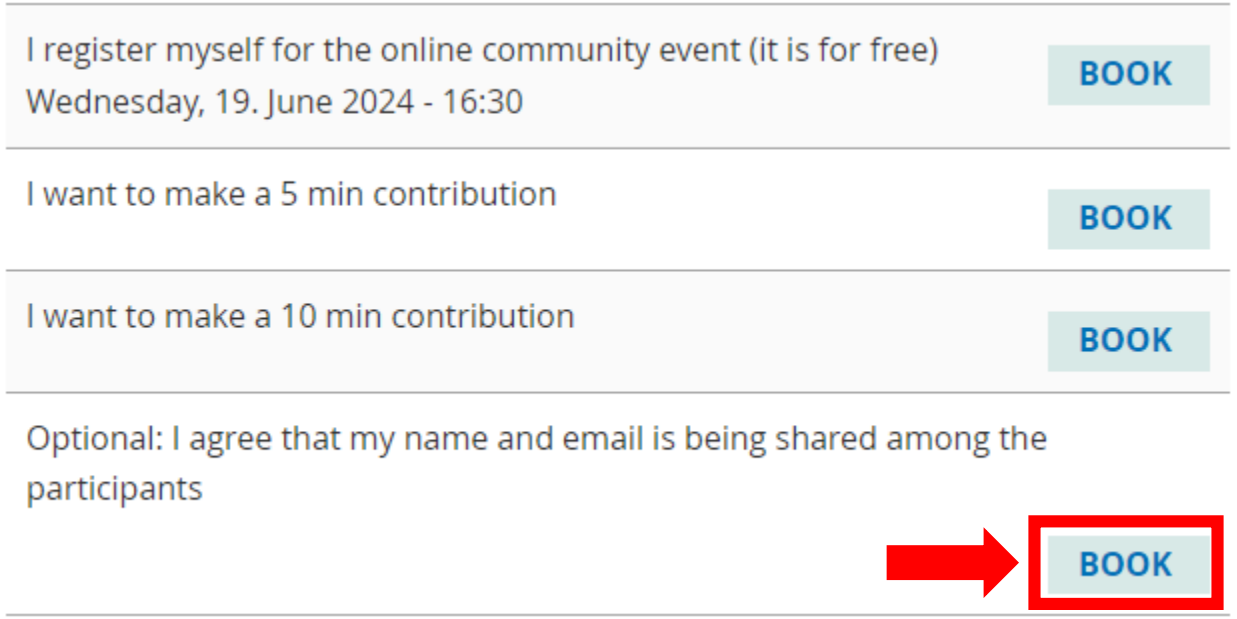

Imprint

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