Haus- / Studienarbeit

MaCFP - Parallel Burner - Fire Spread Modeling with FDS

BERGISCHE UNIVERSITÄT WUPPERTAL

Topic

Fire Spread Modeling with FDS - Parallel Burner Scenario of MaCFP workshop.

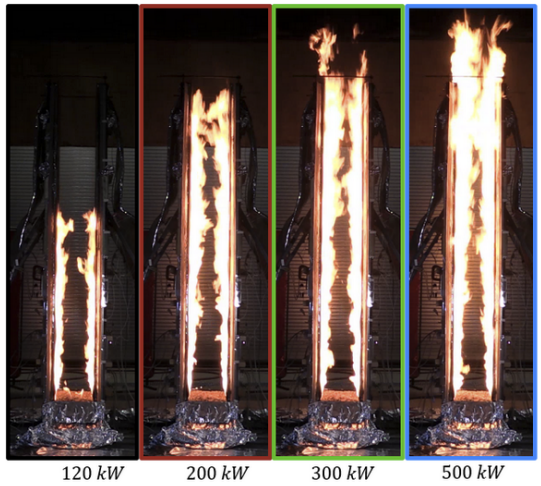
Background

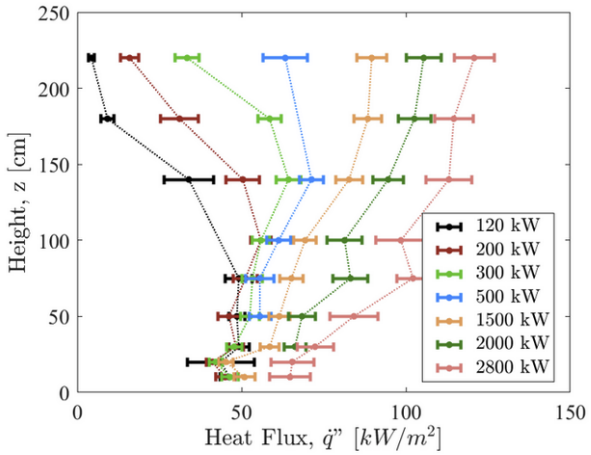
Fire Spread phenomena are extremely complex and makes it challenging for modelers, but also for experimentalists, to provide reliable and correct predictions (or validation data).

For this thesis a Parallel Burner scenario with PMMA as material will be calculated with **FDS**. The aim is to evaluate the impact of different modeling parameters for radiation and convective heat transfer on the resulting heat release rate and heat fluxes.

This work is part of the international workshop MaCFP, where researchers discuss and compare results from different participants for the same experimental scenario.

Further information about the available experimental data is available here: `https://github.com/MaCFP/macfp-db/tree/master/Fire_Growth/NIST_Parallel_Panel`





Main Steps

1. Get familiar with experimental setup
2. Create initial FDS setup with all needed material settings and post-processing devices
3. Mesh study
4. Evaluate the impact of radiation solver settings

Tools

- FDS (or OpenFOAM/fireFoam)

Requirements

- High motivation
- Interest in CFD and Fire Simulation

https://fire.uni-wuppertal.de

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