

# Description of supplementary material



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**A comparison of mechanistic models for the combustion of iron microparticles and their application to polydisperse iron-air suspensions**

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## General description

This supplemental material contains the processed secondary data which was used to generate the plots and graphics in our submission. From selected setups, additional raw data is provided. The reader is referred to the submission for model equations, boundary conditions and citation instructions.

### Figure2\_model.csv

Raw simulation results of single particles combusted in air. The particle state is given dependent on the time  $t$  at a constant gas phase environment. The data is provided for the three particle models FIRR, FOSK and SOLD in a separate file. Particle quantities begin with `particle1_`, gas phase quantities do not have a prefix.

### Figure3,4,5,11\_left/right

Processed, secondary data which was used to create the plots. The reaction front speed  $s_L$  is given dependent on equivalence ratios, models, particle size distributions or model parameters.

### Figure6.csv

Raw simulation results of a polydisperse flame with particle diameters between  $10\ \mu\text{m}$  and  $50\ \mu\text{m}$ . Particle and gas phase state are given dependent on the spatial position  $X$ . Particle quantities have the prefix `particle1_0` to `particle1_20`. Gas phase quantities do not have a prefix. The FOSK model is used for the simulation.

### Figure7.csv

Processed, secondary data which was used to create the plots. The gas phase temperature and oxygen mass fraction are given dependent on the particle diameter and model.