

# **Data from – Numerical simulation of friction extrusion: Process characteristics and material deformation due to friction**

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## **General information**

There are two main folders:

- Experiment
- Simulation

## **Experiment Data**

The experimental file contains an excel file “.xlsx” with the process log data of the friction extrusion experiment used. It is named “AA\_7075\_14Ftc\_FE.xlsx”. And EBSD data deduced for the different microstructural zones such as the base material (BM), thermo-mechanical affected zone (TMAZ 1 and 2) are named as BM\_scan4\_Rescan\_OIM4.5.osc, TMAZ2\_scan6\_Rescan\_OIM4.5.osc and TMAZ1\_scan3\_Rescan\_OIM4.5.osc respectively

## **Simulation Data**

The simulation folder contains all the simulation input files for conventional and friction extrusion studied. The last name of the simulation input files describes the extrusion process e.g. friction extrusion “\_FE.KEY” corresponding to each input file. The other two files in the simulation folder contains the deduced process force and thermal history of friction extrusion used for validation, and they are named “force\_FE.txt” and “temperature\_FE.txt” respectively. User routine used to calculate the Zener Hollomon parameter and grain size is “pstusr23.f”

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