Rume documentation

# About

Rume is a program to calculate the cross section via a Ruthelde Simulation.

@Johan Extra info?

# How to run it

Usually Rume gets started by dragging task file to *task\_mill%1.bat*. Such task file has the following format:

A screen shot of a computer program

Description automatically generated

The file should contain a list of so called tasks. Each task has at least one .imec file and a json file (coming from Ruthelde). If instead of a list, you provide the program with a dictionary (= 1task), it will run this one task. This was done to ensure backwards compatibility.

The task file requires two other files to be present in your working directory (where you ran the batch file). First *"RBS23\_227\_R01A\_d01.imec"* has to be present in a subdirectory called *“data”*. And *“sim\_input.json”* needs to be present in the directory of the batch file.

# The Code

Next let’s talk about what happens under the hood once you start this program. The script will start by spinning up a Ruthelde8 server. You will not see this server as it runs as a subprocess in python. If you want to replace the Ruthelde instalation, head to *“rume\_package/Ruthelde\_Server.jar”*.

After this, files are being read and python will loop over the tasks. For each task, multiple ‘txt\_files’ are read (later replaced to be *.imec* files) and a RutheldeSimulation is started. After this simulation, the result is logged into a csv file (+backup csv) and both *aerial\_density* and *charge* is read and parsed to a second RutheldeSimulation. After that, the result is plotted in a cartesian and logarithmic plot. The Ruthelde Server gets terminated and the program is done.