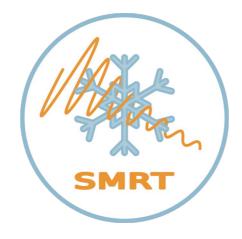
# Intensive simulations with SMRT



Sponsored by :

Calculate the sponsored by :

European Space Agency

3rd SMRT Training Bremerhaven, Jul 2023

## Different options to run SMRT

- 1) sequential on your laptop: one simulation at a time, but scipy is multi-threaded → use multiple core for the intensive matrix eigenvalue problem (=which takes most of the time) model.run(sensor, snowpack)
- 2) parallel on your laptop: one simulation in each core, but multi-threaded scipy is switch off. model.run(sensor, snowpack, parallel\_compute=True)
- 3) any of the two on a single node of a big cluster using deported jupyter lab (or notebook)

  Same as above
- 4) parallel using a dask cluster (using as many nodes as you want!): driving code run on your laptop, but simulations run on the dask cluster

model.run(sensor, many\_many\_snowpack, runner=dask\_runner) → see the tutorial

5) parallel using celery, ... and any other implemented runners. See the runner directory.

same as 4.

## Different options to run SMRT

### Laptop:

#### **HPC Cluster**

#### Case 3:

Create a ssh tunnel to port 8880 Use your browser: localhost:8880 Run juputer lab on port 8880

#### Case 4:

Create a ssh tunnel to port 8786 for dask Create a ssh tunnel to port 8787 for dask monitoring (optional)

Run jupyter lab locally

Setup a dask\_runner (see tutorial) and call model.run(sensor, many\_snowpack, runner=dask\_runner)

Synchronise conda environment with the laptop

Run "dask scheduler" Run "dask worker"