InterFrost spread sheet for participant's code information

File is code related, if you use more than one code please provide one file per code …

Aims: 1°) provide pieces of information that will probably be essential to understand possible differences in the results or performances, 2°) provide info that will be essential to improve the codes from a "best practice" perspective.

Name of the code **Ginette**

Participant laboratory **Metis, Mines Paris Tech, Cerege**

Participant name(s) **Gonçalvès, Rivière, Jost**

Is the code used or developed by the team? **developed**

Numerical scheme, order of the numerical scheme **finite volume method**

Time discretization strategy (fixed time steps / if adaptative, provide further information)
Adaptive time step, depends on convergence

Spatial discretization

- 2D / 3D **2D**
- external/internal mesh generator **Internal mesh generator**
- structured or unstructured grids, what kind of polyhedral mesh (tetra ? hexa ?)
  tetrahedral

Treatment of non-linearities?

- Method used (Newton, Picard …) **Picard's iterative scheme**
- Convergence criterion expression and threshold value **user choice**

Resolution of linear systems

- **Linear solvers**
- **pre-conditioner PCGS, BiGC**

How is the TH coupling managed?

- Sequential resolution / iterative process / simultaneous inversion? **Sequential resolution**

List of available boundary conditions options in the code **Dirichlet, Neumann**

Sources of averaging (under relaxation, spatial averaging on variables …)

Constitutive laws implemented

- **Saturation curve : exponential, linear, Van Genuchten, Brooks and Corey**
- **Permeability as a function of temperature : linear, impedance, Van Genuchten, Brooks and Corey**

What kind of averaging for the properties (depending on water, ice, bulk parameters)? **geometric, arithmetic or Woodside's formulation**

Is (massively) parallel resolution implemented? **no**

- Which approach (domain decomposition, loop decomposition)
- Indicative number of processors

Papers / reports / web site providing (further) information **PhD Rivière**

Further pieces of information?