* TO DO List (1.1.2022-X.1.2022)

(e.g. **Done** marked with blue, **in progress** marked with yellow, **comments/questions** in gray)

* Meeting every two weeks from the second week in January (Thursday at 13:00, first meeting 06.01)
* Check the shared link—right of edition/uploading/downloading
* Download the necessary tools: Gmesh, Paraview, OGS-release version , Notepad(or some other editor)
* Create the account in the computer of the Hiwi room
* Review the input file
* Tutorial video OpenGeoSys
* Create a geometry and mesh (2D in X-Y, (16 cm (y)\*4cm (x) 160 (y)\*40 (x) elements )), vtu add materialIDs, extract the top, left, bottom, right, top boundaries in .vtu or gml using gmesh)
* time plan for meeting: 10.01.2022 or 11. 01.2022 13:00
* Run a test in ogs
* Paper Review: Paper reading, dependency of critical parameter on other parameters

Until the next meeting:

* Write Python script: Python or Matlab Script for transfer the .gli format to .gml format
* Learn how to draw the evolution of variables at one location/node.
* How to draw distribution of variables
* Understand Cam-Clay model and how it applies in the model
* Find out the values of parameters at which the critical value of stress ratio appears.
* Perform sensitivity analysis and see the evolution of volumetric and deviatoric plastic strain

**TASKS FOR APRIL**

* Use a smaller sample of 16 cm to run this simulation.
* Change total simulation time in prj file to around 800 s. also change where the mesh file is called in the boundary conditions. Use a new geometry file and delete the mesh files in the start of the prj file.
* Now use various combinations of parameters and generate results in ogs.
* Check if the solution is homogeneous or not. If it is homogeneous, then take only one point and plot axial strain versus the deviatoric strain in a python script. Do this by finding the id of the node in Paraview. Now find the evolution of the deviatoric stress-axial strain with time.

**Tasks for May**

* + **Read the new research paper,s constitutive model**
  + **Read the .prj file and understand how the constant parameters are defined.**
  + **Make a new geometry file for a 2D rectangle as described in the paper. Convert the file to appropriate format (.vtu\*)**
  + **Also understand the boundary conditions at the 6 faces of the cubic geometry. Use that understanding to applz BC\s to the 2D rectangle.**

September 16:

* Documentation regarding the comparison of the original BDT prj file with the changed one
* Error information
* Achive the finished tasks
* Uploading the input files for BDT simulations