**Procedure for running lab environment simulations through gadi, using the MATLAB script ‘generator.m’**

**Preamble**

Within the folder *generator.zip* are eight files:

* + generator.m
  + hillCode.m
  + writeData.m
  + eedata\_blank
  + data\_blank
  + data\_blank.mnc
  + data\_blank.pkg
  + config\_blank.yaml

The primary files of interest are the first three listed. The script genetator.m is the parent file that handles user inputs and variable declaration. When run, it asks for a model identifier; which is purely for the convenience of the user. This identifier (a string input) is stapled onto the end of nearly all output folders, as well as the .field file directory. It then activates the script hillCode.m and writeData.m.

**Procedure**

1. Open generator.m and change the variables (see script comments for descriptions) as desired. Note that *w0*, the hill width still needs physical units. Run the script when ready and enter (optional) an identifier tag for the model. For example: *omega\_7dot8* would identify this model as rad/s and appear in all shorthand titles, like *lm\_omega\_8dot2\_...*
2. Once the code has finished, there should be a folder within the working directory labelled *model\_{identifier}* which contains two subfolders, distinguished by the extensions *fields* and *models,* as well as a .png picture. The picture is meant to provide a quick illustration of the environment settings and model grid setup (of variable resolution).
3. The models subfolder should be copied into the user’s control directory (/payu/…), whereas the fields subfolder should be copied into the mitgcm input folder (/scratch/…/mitgcm\_input/).
4. Then performing **payu sweep**, **payu setup**, **payu sweep**, **payu run** on the relevant model folder will start the model.