Advanced Ceramic Technologies (MSE 495)

– Stereological EBSD analysis software installation –

Instructions for a Windows environment

- Download and Install Miniconda (https://docs.anaconda.com/free/miniconda/)
  - ⇨ add conda to windows PATH (typically C:\ProgramData\miniconda3\condabin AND C:\ProgramData\miniconda3) to do this type env in the start menu and select "edit the system environment variable" follow instructions on the screen
- Download and Install Fortran (https://github.com/LKedward/quickstart-fortran/releases)
  - ⇨ make sure "add to path" is selected during installation. By default Fortran is only added to Path of current user
- Download and Install BC (https://embedeo.org/ws/command_line/bc_dc_calculator_windows/bc-1.07.1-win32-embedeo-02.zip)
  - ⇨ unzip and copy folder where desired, add path to the bin folder to the Windows PATH
- Download and Install ImageMagick (https://imagemagick.org/script/download.php)
- Download and install GMT (https://www.generic-mapping-tools.org/download/)
  - ⇨ Make sure GMT bin is added to the PATH (option during installation)
  - ⇨ GMT is also available in conda, but either it is not properly registered or the way the draw_stereogram file is programmed it does not work
- Download and install ghostscript 32 bit for windows (not the 64 bit version !) (https://ghostscript.com/releases/gsdnld.html)
  - ⇨ Ghostscript is also available in conda, but the way the draw_stereogram file is programmed it does not work
- Open cmd as administrator (right click menu --> "run as administrator")
  - ⇨ Enter: conda create --name ebsd "this creates an environment for ebsd
  - ⇨ Enter: conda activate ebsd "this activates the ebsd environment
  - ⇨ Install Posix: conda install conda-forge::posix "this installs posix in the ebsd env.
  - ⇨ Install Make: conda install conda-forge::make "this installs make in the ebsd env.
- Download the script into C:/GBCD from https://github.com/gr20cmu/gbXstallography
- Now navigate in the command (with conda ebsd environment activated) to the GBCD folder
- In each subfolder you will have to compile the exe files on your computer. To do use in each folder the command: make clean
- You are now ready to copy the data into the folders to sequentially treat the data after properly configuring the input.txt for each analysis.

- Note: Each folder does a specific operation. The output file generated in one folder is to be copied as input file into the following folder. This can be done in Windows explorer.

- Tip: If you want to generate high quality images from GBPD or GBCD use the ghostscript to convert into the desired format directly in the command. To generate a PDF from the PS file use: gswin32c -dNOPAUSE -dBATCH -sDEVICE=pdfwrite -sOutputFile=[output file name].pdf [input file name].ps

Instructions for a Mac environment

- Install Xcode, Homebrew (https://brew.sh/)

- Use homebrew to directly install GCC (brew install gcc), Ghostscript (brew install ghostscript), GMT (brew install gmt), ImageMagick (brew install imagemagick) and BC (brew install bc).

- Download the script into an GBCD folder created in your home directory from https://github.com/gr20cmu/gbXstallography

- Open a terminal. Navigate to the GBCD folder where you put the files downloaded from github. In each subfolder you will have to compile the fortran code on your computer. To do use in each folder the command: make clean

- You are now ready to copy the data into the folders to sequentially treat the data after properly configuring the input.txt for each analysis.

- Note: Each folder does a specific operation. The output file generated in one folder is to be copied as input file into the following folder. This can be done in Finder.

- Tip: If you want to generate high quality images from GBPD or GBCD use the ghostscript to convert into the desired format directly in the command. To generate a PDF from PS file use: gs -dNOPAUSE -dBATCH -sDEVICE=pdfwrite -sOutputFile=[out file name].pdf [in file name].ps

(Instructions for Mac not tested but shall be (hopefully) fine :o))