This is a description for using the code to generate the plots reported in the manuscript egusphere-2023-2119.

1. Run the script “master\_4creating\_reference\_model.m” to generate the data for figure 3, which is created by running the script “plot\_figure3\_reference\_model.m”.
2. Run the scripts “master4testing\_deltat.m”, “master4testing\_e0.m”, “master4testing\_G0.m”, “master4testing\_sigma0.m” to generate the data for figures 4-7, which are created by running the script “plot\_figures4\_7\_testing\_sigma0\_e0andG0.m”.
3. Run the script “master4synthetic\_trasects.m” to generate the data for figure 9, which is created by running the script “plot\_synthetic\_models\_figure9.m”.
4. Run the script “master4synthetic\_trasects\_without\_boreholesamples.m” to generate the data for figure 9, which is created by running the script “plot\_synthetic\_models\_without\_boreholesamples\_figureS2.m”.
5. Run the script “master4example\_trasects” to generate the data for figure 10, which is created by running the script “plot\_example\_transects\_figure10.m”.

An matlab GUI application is also built, it is available in my GITHUB site.