**OVERVIEW**

Hi Gwenn! Hope you’re doing well and the semester isn’t too crazy ☺

So this document is written with the assumption that you’re doing all the work on my old computer. That will be the easiest plan because all the file paths are already set and I think it’ll be the least tinkering.

If you want to download all the stuff onto your own computer, you can pull the git repositories. There is one for the text documents and one for the matlab stuff. Here is documentation for how to clone a repository to your local machine <https://help.github.com/articles/cloning-a-repository/>

The two repositories you’d be cloning are:

https://github.com/apulwicki/MastersDocuments

https://github.com/apulwicki/SnowDepth/tree/Density

That begin said, here are the directions for the files paths within my computer.

**How to edit the manuscript**

I’ve already updated the files remotely so the most current version (sent to your email) is the one located on my computer.

Folder of interest = Documents/MastersDocuments/Paper I

This folder contains all the tex files related to the paper and the images needed for the manuscript.

Important files to note:

UncertaintyWB\_Review.tex \*\*Tex file with revised manuscript

WinterBalance.tex Tex file of original submission

SupplementaryMaterial.tex Tex file of Supplementary Material   
 (updated with changes from reviewers)

Uncertainty…\_Response.doc Doc file with all reviews and responses

The .bib file in the folder above this one (Documents/MastersDocuments) and is

titled MastersLit.bib. The file should be up-to-date.

How to…

🡪 Edit the manuscript: simply make changes to the UncertaintyWB\_Review.tex file  
and compile accordingly.

🡪 Add stuff from thesis: copy and paste image files from the folder Documents/MastersDocuments/Thesis to the Documents/MastersDocuments/Paper I folder. Copy and paste text from the thesis tex file (Documents/MastersDocuments/Thesis/THESIS.tex)

**How to edit figures**

I’ve also updated this folder with the scripts needed to generate figures. The two figures that are related to the MC runs are the PDF and the relative uncertainty (purple one).

Folder of interest = Documents/Data/SnowDepth

Important files to note:

Plot\_PaperI.m This is script is a self contained script that generates all the plots for the paper. As long as you’re in the “folder of interest”, each section will load the necessary data from .mat files, plot the data, and save it in the “folder of interest” for Paper I (above) as a pdf of the correct dimensions. (Note: Some figures have wide margins so I’ve clipped them in the past to make them fit better in the manuscript). You cannot run the sections corresponding to MC because they are not updated in this file (see below). Each section is a different figure.

Plot\_PaperI\_OK.m This script is specifically for the two figures related to MC. I added the plotting to a separate script to make it easier. Each section corresponds to a figure.

PlotTopoParameter\_IGS.m This is the plotting function that makes the three glacier plots. To change the limits of the color scale, change the max and min values in line 26 and 27 (needed for the plotting of relative uncertainty)

MonteCarloOK.mat Contains the data generated by the script that I started

remotely. You will know that the script is done running when this file is present in the folder system.

MonteCarloOKtemp.mat Contains data generated by the script at an intermediate step (Monte Carlo is done but other calculations were not successful). If this file is present than that means the MC section ran but subsequent sections did not and likely need some debugging)

MonteCarloOK.m Script written to perform the OK MC. If MonteCarloOKtemp.mat exists but MonteCarloOK.mat does not, you will have to debug some of the sections.

/Kriging/DiceKriging.R R script that performs the OK

To generate the figures from OK MC, just run the Plot\_PaperI\_OK.m script. You will likely have to change the color limits within the plotting function.

Unfortunately, I can’t guarantee that this will all work… In fact, I’ll be amazed if it does! Good luck and don’t worry ☺

**UK with elevation**

I wasn’t successful in the end to get something clean with the UK interpolation with elevation. I was able to get the R side of things working and the results looked somewhat promising but the b\_w values are wonky (below) and I couldn’t automate the matlab end of things so that the data would transfer nicely. Not sure what the problem is…However, if you’re keen to tinker than the R script is Documents/Data/SnowDepth/Kriging/UKtesting.R and the matlab script is Documents/Data/SnowDepth/MonteCarloUKelev.m

