23 Tue

A Bash

Learnt the following

a) translate `tr`: when appending with `echo foo >> bar`, the final character is a newline (`\n`). Therefore the next thing we append appears on the next line. If we don't want this behavior, we could `tr` out the new-line character through

```
echo "foo" | tr "\n" "(whatever)" >> bar
```

which writes `foo(whatever)` to the file `bar` as usual, but whatever we append next will go to the right of `foo(whatever)` instead of to the next line.

b) basic calculator `bc` for floats:
`echo ''scale=2;2/100 ''| bc` returns .02

c) sed delimiter: turns out that any character following `s` is the delimiter, so for example `sed —i 's+hello+world+'file.txt` is the same as `sed —i 's/hello/world/'file.txt`.

B SLURM

Went through the following documentation:

a) HPC basics

b) Storage Documentation

c) Data Storage → Overview of File System (*this one has a nice table*)

d) Batch System Concepts

24 Wed

A Meeting with Julie

a) Don't get caught up in the details of the loop. Focus on being able to navigate through it; remember what each part does and what files are called to do what (and where they are). *Finish the first assignment by next Wednesday.*

b) Nicholas is currently working with XF for PAEA ARA-hpol (part B), so I will probably be working on the GA for ARA-hpol (part A)? Confirm with Amy on Friday.

c) Should I start looking into AraSim and learn about Birefringence? Confirm with Amy on Friday.

B SLURM

Went over the following

a) Batch System Concepts

b) Batch Execution Environment

c) Job Scripts
seems like we don't really use parallel computing introduced in this section? We just submit jobs through a job array

d) Job Submission (mostly focused on **Job Arrays**). In particular, note that for example

```
sbatch --array=1-10%4 test.sh
```

is going to submit an array of 10 jobs, but only 4 of these will be run at the same time (so 1-4, then 5-8, and finally 9 and 10).

Some options:

a) `A` is account (`PAS1960`); `N` is number of nodes; `t` is wall time.

b) `n` is the number of tasks. Much better explanations available at https://stackoverflow.com/questions/65603381/slurm-nodes-tasks-cores-and-cpus and https://stackoverflow.com/questions/39186698/what-does-the-ntasks-or-n-tasks-does-in-slurm

C problems

a) still a bit unfamiliar with the SLURM directives such as `n`. Should review the section `Job Scripts` in the future.

b) still unfamiliar with parallel computing (multiple nodes and/or multiple cores). But since we always use only one node per job, I don't have to worry about and `srun`, `sbcast` and all those parallel computing commands (at least not now?)

25 Thu

A Meeting with Julie

a) received Julie's candidacy paper. Plan to start reading by next meeting (Wed).

b) Restarted homework 1 on google drive. Half-way to finishing (?)

c) **TODO:** Look into part E tomorrow. Seems like things are not exactly as described by the dissertation appendix.

26 Fri

A Meeting with Julie

a) Pretty much done with homework 1 part E, but I should look into it in more detail once I am more familiar with the entire loop.

b) Going through the question 3's for the remaining parts. Should be able to finish on time as planned.

27 Sat

A Meeting with Julie

a) Mostly done with Part B1

28 Sun

A Meeting with Julie

a) Did Part B2

b) Did Part C

29 Mon

Memorial Day, went hiking :)

30 Tue

A Meeting with Julie

a) Did Part D1 and Part D2

B Bash

a) comment block:

```
: << END
  Hello World!
  This is another line.
END
```

note the white space around `:`, `<<` and `END`!

b) doing arithmetic, note that many operators need to be escaped. For example:
`expr $A \* $B`
returns $A \cdot B$.

c) Wrote a little script at the target directory of `GE60` called `Jason_cp.sh` to copy all the relevant files and directories to my own working directory, which will later be push to Github to allow me to work locally. Ran the script through job submission as practice; took around 10 minutes.

d) **TODO:** Check which of these files are actually essential.