

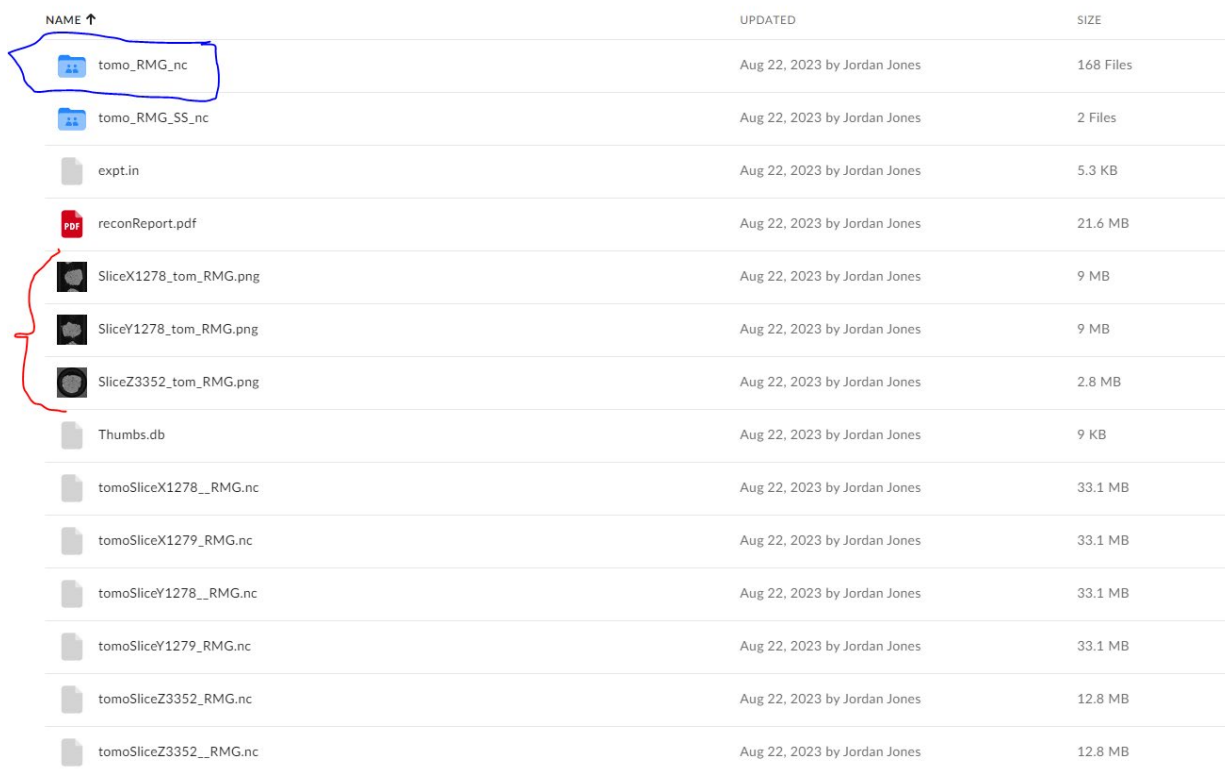
## How to work with 3D data from the OSU microCT facility

After the data is collected, the 1000s of slices get reconstructed to form a 3D volume of grey-scale intensities.

The data will be stored in Box, and you will be sent a notification once it is available for download. Once you log into Box, your folder will look like the example below. The root folder will have 3 .png files (see red bracket below) with cross sections in the x,y and z dimensions for easy viewing.

The actual data is located in the top folder (marked in blue below) which should contain a large number of files (in this case 168). The files in this subfolder consists of vertical sections (blocks) of your sample, so if you stack them all on top of each other, you will have your complete 3D volume.

As you will see, each block is around ½ Gb, so if you have 168 blocks, you will have a data set that is around 84 GB once stitched together. You will need at least that much RAM on your processing computer to be able to open the entire dataset, and even more to be able to work with the data. Often, there is space around your object of interest that can be cropped away – if you need us to help with that, we can crop the data to a size that you are more likely to be able to work with, -so please request that. We can also just stitch all the blocks together for you if needed. If your computer is still not able to handle the data, then you can use the processing machine we have available at the facility which has ¼ TB of memory. The machine can be accessed via remote connection and the cost to use it is \$40/hr.



NAME ↑	UPDATED	SIZE
tomo_RMG_nc	Aug 22, 2023 by Jordan Jones	168 Files
tomo_RMG_SS_nc	Aug 22, 2023 by Jordan Jones	2 Files
expt.in	Aug 22, 2023 by Jordan Jones	5.3 KB
reconReport.pdf	Aug 22, 2023 by Jordan Jones	21.6 MB
SliceX1278_tom_RMG.png	Aug 22, 2023 by Jordan Jones	9 MB
SliceY1278_tom_RMG.png	Aug 22, 2023 by Jordan Jones	9 MB
SliceZ3352_tom_RMG.png	Aug 22, 2023 by Jordan Jones	2.8 MB
Thumbs.db	Aug 22, 2023 by Jordan Jones	9 KB
tomoSliceX1278__RMG.nc	Aug 22, 2023 by Jordan Jones	33.1 MB
tomoSliceX1279__RMG.nc	Aug 22, 2023 by Jordan Jones	33.1 MB
tomoSliceY1278__RMG.nc	Aug 22, 2023 by Jordan Jones	33.1 MB
tomoSliceY1279__RMG.nc	Aug 22, 2023 by Jordan Jones	33.1 MB
tomoSliceZ3352__RMG.nc	Aug 22, 2023 by Jordan Jones	12.8 MB
tomoSliceZ3352__RMG.nc	Aug 22, 2023 by Jordan Jones	12.8 MB

The data is stored in NetDCF format, so once you are ready to work with the data, you will need to be able to read NetDCF files. If you are using ImageJ/Fiji, you can download a plugin such as this one that will help you open the data.

[https://lmb.informatik.uni-freiburg.de/resources/opensource/imagej\\_plugins/netcdf.html](https://lmb.informatik.uni-freiburg.de/resources/opensource/imagej_plugins/netcdf.html)

Once you're able to open the blocks, we strongly recommend you start working on your image processing workflow on a single (or just a few) sections (=blocks) and then once you've got the workflow established, then work with the entire volume (otherwise you will spend a lot of time staring at the screen while your trial algorithms process).