**Processing of microCT data for stl files**

Micro CT datasets have too much detail that cannot be rendered by 3D printers and unprocessed

will result in stl files that are far too large for 3D printing software. We image in micrometers & printers use millimeters. Printers also require a binary image. Thus processing is required, as below:

**Reconstruction:**

- Increase smoothing to 4 or 6.

- Ensure gray output

- Increase contrast of bone by setting black & white levels.

 Aim for a black background. Internal bone details are not so important.

- Output to a bmp.

**DataView:**

- When loading downsize by 2 - 4 in 3D.

- Orientate sample and use a VOI to reduce file size

- Select smoothing

- Choose image to be in gray then can modify dynamic range. (std is 0-255)

 As a starter; Black 41. White 214

- Save transaxial into a new directory (DV added to filename)

**CTAn:**

- When loading downsize by 4 in 3D

- Binary tab - threshold to minimize background white speckles. 18/255

- Custom processing;

- Filter Gaussian blur 1pix in 3D

- Filter Anisotropic Privilege high contrast edge 15 /20 0.3

- Threshold 18/255

- Despeckle White less than 20 pix in 2D

- Despeckle Remove pores 2D by image border

- Filter Gaussian round 2 pix in 2D

- Save bitmaps. Select monochrome.

- Load bitmaps

- Threshold

- Create stl file.

**Little penguin head:** directories

Rec. 6.27 Gb 1794 files each 3.57 Mb

DV 5.20 Gb 1773 files each 3.0 Mb

Binary 515 Mb 886 files each 96 Kb

STL 439 Mb

**Gentoo head:** directories

Rec. 44.5 Gb 3950 files each 11.8 Mb

DV 41.0 Gb 3900 files each 11.0 Mb

CTAn 649 Mb 980 files each 693 Kb

Binary 709 Mb 980 files each 88 Kb

STL 640 Mb