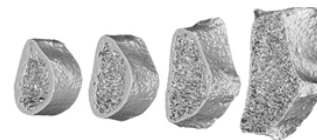


Bone Imaging Laboratory

Standard Operating Procedure



MicroCT Ring Correction

Prepared by: Michelle Kan

Date: 2012-AUG-03

When suspected ring artifact seen in scans, the following procedure will be completed before contacting Scanco to ask them to do a correction for the pixels in the detector correction file.

1. Record list of scans that are affected by the defective pixels - Record sample name, sample number, measurement number and specific slice #(s) that are affected - Affected scans will have a bright ring-like artifact in the slice	☐
2. Make "JELLO phantom" 2 tablespoons gelatin per cup of water - Allow to solidify before scanning	☐
3. Place JELLO phantom in scanning tube Secure phantom by taping it to foam and to the tube	☐
4. Complete 3 scans using control file #68 – Water ring correction full stack - Scan under sample No. 3235 – Ring_Artifact_Check - Select control file # 69 and click precalibrate - When precalibration complete, insert tube with JELLO phantom inside and complete a scout view (0-50) - Set the reference line to include a homogenous region and start scan - Repeat scan 2 more times (do not need to set reference line again, just click scan)	☐
5. Check the scans and record the slice numbers that are affected	☐
6. Optional: If many slices are affected, cutout .AIM file to view in ImageJ Use script #4: <i>3D segmentation of VOI, 1 solid object</i> in uct_evaluation	☐
7. Generate .tif files for affected slices - Can be done using either on alpha system or in ImageJ with an AIM plugin - Instructions on how to use ImageJ to generate .tif files can be found in the <i>ImageJ: generate TIFF from AIM</i> document - Generally easier to be done on alpha system (on command line, type \$ tif and follow prompts) Check scaling max value before generating tif files using eval65 before generating tif files - If only a few slices affected, save (use the print function) slices as .tif in uct_evaluation	☐
8. Send representative .tif files along with list recorded in Step #5 and Step #1 to Scanco	☐

Bone Imaging Laboratory

Standard Operating Procedure



9. Redo JELLO phantom scans after Scanco has completed correction - Same protocol as listed in #2-4 - Record any slices that are still affected by ring artifacts and let Scanco know if necessary	☐
***FOR XTREMECT, THE FOLLOWING STEPS ARE NOT POSSIBLE, BUT FOR OTHER MCT SYSTEMS, FOLLOW STEPS #10- 14 TO FIX AFFECTED SCANS	
10. Run @COM:DISK_MOUNTIES.COM - Generates list of files on data disk, giving directory with sample number and measurement number - Output txt file in sys\$scratch - Import txt file into Excel, sort by date to determine which scans need to be reconstructed	☐
11. Apply pixel correction - Write a script that defines the RSQ and then runs UT:PIXEL_CORR_APPLY - Can only be done when logged in as user: calibration - Example: <pre> \$ DEF RSQ_FILE DISK2:[MICROCT.DATA.00000674.00011864]C0010742.RSQ \$ RUN UT:PIXEL_CORR_APPLY Y RSQ_FILE </pre>	☐
12. Delete (or rename) old ISQ	☐
13. Reconstruct all affected images - Using the learn command, create a script that submits all the reconstructions to the que @com:reco_all.com <i>reco_angle sample# measurement#</i> - reco angle generally 0, unless want to rotate image	☐
14. Redo any analyses if necessary	☐