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In this issue:

- [Correcting image rotation](#)
- [Upcoming events](#)
- [Bruker microCT news](#)
- [Image of the month](#)

● Welcome

Finally, your scan is finished! You can't wait to see the results... Quickly checking the reconstruction settings before launching the reconstruction... Just a few more minutes... Done! You open the dataset in Dataviewer and start scrolling through the slices. Wait a minute... I did fine-tune the misalignment right!? What is going on here? The central slices look fine, but the top and bottom slices are misaligned... Now what!?

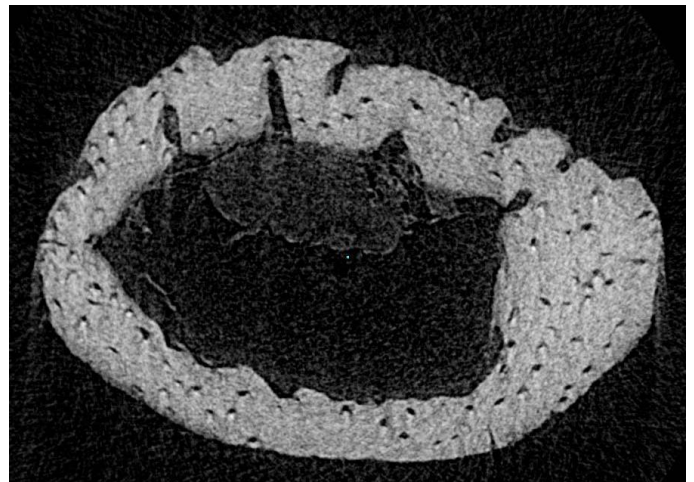
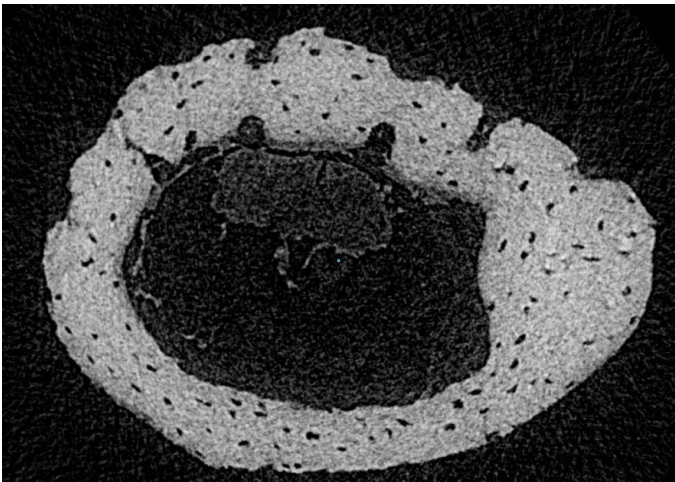
Learn how to correct image rotation in the last Bruker microCT Academy newsletter of this year. Bruker microCT is wishing you all happy holidays and hope you will join us again in 2018!

● Correcting image rotation

Alignment is a complex issue in tomography. Consider the axis of rotation, the virtual line around which the object rotates in 3D space during the scan. If this line could be projected by the x-rays onto the camera it would make a vertical line image. In a perfectly aligned scan, this projected line would correspond exactly to the midline of the camera. In this case the misalignment is zero. Yet, in practice, every scan requires a test of alignment, and in most cases a misalignment or "post-alignment" compensation needs to be added. Failure to make this compensation, or applying the wrong value, leads to artefacts. Normally only one post-alignment value is

needed for one scan. Sometimes an alignment problem means that the post-alignment correction needed for best image quality is different at the top and bottom of scans.

In this case, the response should be to perform the alignment test on your scanner, using the supplied alignment pin, which includes a parameter of "image rotation" which should fix this problem. However, a scan affected by this problem of a top-bottom difference can be "rescued" at reconstruction by a special option available in the "engineering mode" of NRecon. This special option is called "Image rotation" and is described in "[MN069-Correcting image rotation](#)".



Cross-sectional slices through a mouse fibula. While the central image is nicely aligned (Left), slices towards the top of the scan are not (Right). Yet, all cross-sections were generated from the same scan, using the same misalignment value.

● Bruker microCT news

A kind reminder that the registration of the next microCT User Meeting is now opened! The meeting will be held in Ghent, Belgium from April 16th to 19th. This annual meeting is a combination of global users' talks on state-of-the-art applications in both life and material sciences and Bruker microCT's training sessions. In 2017, more than 100 participants attended and over 80 abstracts were submitted! Join us for this great networking opportunity next year. Find out more information from:

- [Official invitation](#) – do let us know if you didn't receive it!
- [Bruker official website](#)

● Upcoming events

Bruker microCT will participate with an exhibit in the forthcoming conferences. Please click the link below for more information. We hope to see you there!

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| ▪ iCT | Feb. 6 – 9 | Wels, Austria |
| ▪ ORS | Mar. 10 – 13 | New Orleans, USA |
| ▪ CONTROL | Apr. 24 – 27 | Stuttgart, Germany |
| ▪ ATS | May 18 – 23 | San Diego, USA |
| ▪ ECTS | May 26 – 29 | Valencia, Spain |
| ▪ 3DMS | Jun. 10 – 13 | Elsinore, Denmark |

● Image of the month

3 Orthogonal slices through a mouse embryo (embryonic day 16.5)

Prior to scanning on the SkyScan 1275, the embryo was stained with iodine.

The scan has an image pixel size of 6µm and took 11 minutes to acquire.

The right top panel shows a volume rendered 3D model of the mouse heart, scanned at 1.75µm pixel size at the SkyScan 1272.

