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## X-ray differential phase contrast tomography on a compact industrial micro CT scanner

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Today's industrial X-ray micro computed tomography ( $\mu$ CT) specimen systems allow high resolution 3-D examination of samples in biology or materials science. Up to now, X-ray absorption contrast imaging has been the standard contrast mechanism in these systems. Recent developments showed that phase contrast imaging can lead to significant contrast enhancements [1]. In the past few years, grating interferometry has established itself as a suitable technique for differential phase contrast (DPC) imaging on conventional X-ray tubes [2].

We have developed a new imaging setup based on a grating interferometer and a microfocus X-ray tube. With a uniquely short setup length of 32cm, the setup geometry has been designed for an immediate integration into a commercial SCANCO Medical  $\mu$ CT 100 scanner. As opposed to conventionally used planar shaped gratings, cylindrically bent gratings are used, resolving the problem of a limited field of view [3]. Here we present the first imaging results on the  $\mu$ CT scanner.

References:

- [1] A. Momose et al., Med. Phys, 22 (375-379), 1995
- [2] F. Pfeiffer et al., Nature Phys., 2 (258-261), 2006
- [3] T. Thüring et al., accepted for Appl. Phys. Lett., 2011

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