High-throughput 3D Imaging at KARA

Current high throughput 3D imaging DAQ protocol at KARA enables tomographic scanning of up to 49 samples/batch and 90 seconds/sample with white beam. The DAQ has access to our high-performance computing framework which enables online reconstruction and thus immediate access to the 3D volume of the sample just scanned.

We will present the low-level hardware and software infrastructure and discuss the current bottlenecks in terms of scanning speed. Furthermore, we will present the high-level beam line and experiment control system *concert*, including a demonstration of the common beam line procedures, like focusing and rotation axis alignment. We will shortly present our high-performance computing system *UFO Framework*, which runs on GPUs and includes implementations of various 3D reconstruction algorithms. Finally, we will demonstrate the integration of the complete infrastructure by an experiment run in *concert* with the usage of *UFO framework* for online reconstruction.