

## Environment for full-field tomographic reconstructions at MAX IV beamlines

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### *Abstract*

MAX IV 3 GeV storage ring leveraging the multiband achromat lattice is one of the first 4<sup>th</sup> generation synchrotron accelerators in operation providing hard X-rays (5–35 keV) and hosting 10 beamlines nowadays. Beamlines in operation as NanoMAX are providing techniques profiting mainly from the enhanced coherent properties of the diffraction limited sources as e.g. Ptychographic Computed Tomography. Full-field synchrotron tomography has been missing for a long time. Finally two beamlines will start commissioning the technique in the second half of 2021. The first of them is the imaging end-station of DanMAX beamline and the second is a new ForMAX beamline. DanMAX is a beamline in operation which is dedicated to material science, in-situ and in-operando studies. Contrary the science at ForMAX should be oriented mainly towards products of forest industry as wood and cellulose. Technically the computing environment for tomography imaging at MAX IV is profiting from the central facility infrastructure including: dedicated DAQ cluster and online-computing cluster with GPU nodes, central high performance 3-tiered storage and collaboration with local university computing HPC center LUNARC where data are available already during the experiment and that has very similar scientific software installation as the online-cluster. TomoPy, lprec and Savu were made available for the initial reconstructions. A user friendly web-based interface for automated processing is ongoing as well as its integration into the scientific metadata catalogue (Scicat). Beside this an on-site JupyterHub instance is available for staff and users with well-defined software containers including tomography imaging modules, GPU support and direct access to all experimental data.