

PERSPECTIVES ON SAXS TENSOR TOMOGRAPHY

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SAXS tensor tomography (SASTT) allows to reconstruct the full 3D reciprocal-space map in a three-dimensional object from scattering patterns assembled around two rotation axis [1,2,3]. The method has since its introduction in 2015 been implemented at several beamlines worldwide, and development on both experimental as well as algorithm side is ongoing. The perspective of SASTT at new generation sources with increased brilliance, as well as with detector and acquisition schemes developing, the measurement time needed for this photon hungry measurements with a million or more scattering pattern per sample can be tremendously reduced. The perspective of measuring a sample within an hour is enabling this method for life science samples where enough statistics is crucial. On the algorithm side improvements on robustness and speed of the reconstruction have been achieved. While the previous work has mostly focused on relatively simple symmetries, recent work using a complete spherical harmonic basis enables the method to work with more complex symmetries at relatively low computational cost.