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Progress in rapid tomography for the COMPASS tokamak[1] JAN MLYNAR, VLADIMIR WEINZETTL, Institute of Plasma Physics AS CR, Za Slovankou 3, 18200 Prague 8, Czech Republic, MICHAL ODSTRCIL, FNSPE, Czech Technical University in Prague, Brehova 7, 11519 Prague 1, Czech Republic — After its reinstallation in Prague, the COMPASS tokamak has completed its first year of operation. In this period, among others the first set of Soft X-ray, bolometric and visible light profile cameras has been installed and commissioned. Three more sets (under construction) shall be installed at different ports of the same toroidal sector allowing for plasma tomography with a prospective of real-time processing. A dedicated tomography algorithm for the planned setup was developed, including set-up of the contribution matrix and speed optimization. The proposed code is based on robust and validated post-processing tomography algorithm with a potential to ensue and refine a simplified real-time version. The code implements rapid Minimum Fisher Regularization with optional unisotropic smoothing constrained by magnetic flux surfaces. Reconstruction on simulated data (phantom plasma emissivity models) provided quantitative evaluation of the tomography performance in the designed diagnostic set-up.

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