

F. Arroyo, E. Arroyo, X. Li and J. Zhu, The convergence of the block cyclic projection with an overrelaxation parameter for compressed sensing based tomography, *Journal of Computational and Applied Mathematics*, Vol. 280, pp. 59-67, (2015). DOI:10.1016/j.cam.2014.11.036.

Abstract

The convergence of the block cyclic projection for compressed sensing based tomography (BCPCS) algorithm had been proven recently in the case of underrelaxation parameter in the interval $(0,1]$. In this paper, we prove its convergence with overrelaxation parameter in the interval $(1,2)$. As a result, the convergence of the other two algorithms (BCAVCS and BDROPCS) with overrelaxation parameter in the interval $(1,2)$ in a special case is derived. Experiments are given to demonstrate the convergence behavior of the BCPCS algorithm with different values of the relaxation parameter.