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Abstract

The recently-developed superiorization approach is efficient and robust for solving various constrained optimization problems. This methodology can be applied to multi-energy CT image reconstruction with the regularization in terms of the prior rank, intensity and sparsity model (PRISM). In this paper, we propose a superiorized version of the simultaneous algebraic reconstruction technique (SART) based on the PRISM model. Then, we compare the proposed superiorized algorithm with the Split-Bregman algorithm in numerical experiments. The results show that both the Superiorized-SART and the Split-Bregman algorithms generate good results with weak noise and reduced artefacts.