



Research Talk

AN OUTER QUADRATIC APPROXIMATION METHOD FOR SOLVING MULTIPLE-SETS SPLIT FEASIBILITY PROBLEM WITH MULTIPLE OUTPUT SETS

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Research interests: Linear approximation method and Self-Adaptive Algorithms for solving split inverse problems and its applications.

SPEAKER INTRODUCTION

Dr. Guash Haile Taddele is an assistant professor at Xiamen University Malaysia, and he was graduated in 2022 at King Mongkut's University of Technology, Thonburi, Bangkok, Thailand. Also, Dr. Guash Haile Taddele was a postdoc at the same university King Mongkut's University of Technology, Bangkok, Thailand.

ABSTRACT

In this talk, we discuss an outer quadratic approximation method for solving the multiple-sets split feasibility problem with multiple output sets (MSSFPMOS) in real Hilbert space. First, we discuss the split feasibility problem (SFP): it consists of finding a point in a given closed convex subset of a Hilbert space such that its image under a bounded linear operator belongs to a given closed convex subset of another Hilbert space. We also talk about some generalization problems of the SFP in which MSSFPMOS is one among. Meanwhile, we discuss some existing iterative methods for solving those problems, focusing on their advantages and disadvantages. Next, we take our time to talk about our new result: an outer quadratic approximation method for solving the MSSFPMOS. Our proposed method is self-adaptive and uses projections onto quadratic (balls) approximations of the problem's associated sets. After discussing the major advantages of our algorithm over existing methods in the literature, we finalize our talk with some discussions and plan for some future work.