On the Equivalence of Inexact Proximal ALM and ADMM for a Class of Convex Composite Programming

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Abstract: In this talk, we show that for a class of linearly constrained convex composite optimization problems, an (inexact) symmetric Gauss-Seidel based majorized multi-block proximal alternating direction method of multipliers (ADMM) is equivalent to an inexact proximal augmented Lagrangian method (ALM). This equivalence not only provides new perspectives for understanding some ADMM-type algorithms but also supplies meaningful guidelines on implementing them to achieve better computational efficiency.