

On Optimal Coefficient in Augmented Lagrangian Method for Saddle Point Problem

Felicja Okulicka

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The optimal coefficient in the augmented Lagrangian method for the Saddle Point Problem is found. As the criterion the minimum of the condition number of the diagonal block is taken. The application of the commonly used preconditioners requires the proper approximations of the inverse of this block and of the Schur's complement. The condition number plays the important role in the calculation of such approximations. The result confirms the experimental value of the coefficient commonly used in the augmented Lagrangian technique.