Preconditioners for inexaxct Newton method in big data optimization

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We address efficient preconditioning techniques for the second-order methods applied to solve various sparse approximation problems arising in big data optimization. The preconditioners cleverly exploit special features of such problems and cluster the spectrum of eigenvalues around one. The inexact Newton Conjugate Gradient method excels in these conditions. Numerical results of solving ℓ_1-regularization problems of unprecedented sizes reaching a trillion of variables will be presented. This is a joint work with Kimonas Fountoulakis.

Références

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