Abstract

A new algorithm for solving smooth large-scale minimization problems with bound constraints is introduced. The way of dealing with active constraints is similar to the one used in some recently introduced quadratic solvers. A limited-memory multipoint symmetric secant method for approximating the Hessian is presented. Positive-definiteness of the Hessian approximation is not enforced. A combination of trust-region and conjugate-gradient approaches is used to explore useful information. Global convergence is proved for a general model algorithm. Results of numerical experiments are presented.