Title of the talk:

Further Studies on the Hestenes-Powell Augmented Lagrangian Function for Inequality Constraints in Nonlinear Programming Problems.

Du Xue-wu

Abstract:

In this paper, the Hestenes-Powell augmented Lagrangian function is again considered, for solving inequality constrained problems via unconstrained minimization techniques. Under suitable assumptions, the relationship is established between the unconstrained minimization of the Hestenes-Powell augmented Lagrangian function on the space of problem variables and on the product space of problem variables and multipliers and the solution of the original constrained problem. Therefore, a solution of the constrained problem and the corresponding values of the Lagrange multipliers can be found not only by the well method of multipliers but also by performing a single unconstrained minimization of the Hestenes-Powell augmented Lagrangian function on the product space of problem variables and multipliers. The standard unconstrained minimization techniques are employed. Numerical examples are reported.