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*Extension of Golden Section Search method to Higher Dimensional Optimization Problem.*

Golden Section and Fibonacci search methods due to Kiefer are gradient free numerical optimization techniques which find the minimum of a strictly quasi-convex function of a single variable over an interval by successive iteration. Methods of Rosenbrock, Zangwill, Hooke and Jeeves are familiar derivative free search procedures for minimizing or maximizing functions in higher dimensions. These methods employ discrete steps along search directions. Gradient free multidimensional search method due to Nelder Mead, which is a MATLAB's built in command, looks at the functional values at the extreme points of the simplex. In every iteration, the worst extreme point is rejected and replaced by a new one along the line joining this point and the centroid of the remaining points. The process is repeated until a suitable termination criterion is satisfied. This paper extends the Golden Section search method to multidimensional optimization problems and to strictly quasi-convex functions. An algorithm is proposed and the methodology is illustrated graphically for two dimensions. (Received September 16, 2013)