O método q-GC para otimização global

Érica Gouvêa, Aline Soterroni e Fernando Ramos

Recently, based on Jackson's derivative, a generalization of the classical steepest descent method, called the q-gradient (q-G) method, has been proposed for solving global optimization problems. Along similar lines, we introduce here the q-CG method, a generalization of the well-known Conjugate-Gradient method using the concept of q-gradient vector. For evaluating the performance of this new method, we considered six commonly used 20-variable test functions and compared our results with those obtained by the q-G method and by three Genetic Algorithms (GAs) considered effective in optimizing multidimensional problems. Overall, our results show that the q-CG is a promising new method for solving multimodal optimization problems.