

Rate of convergence to the local minimum for the 0,1,2-order method in global optimization

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We plane to describe recent results in global optimization of G. Lan, S. Ghadimi, E. Hazan, Yu. Nesterov, B. Polyak. Note, that all the results describe the rate of convergence in terms of the number of iterations.

We consider 0-order methods (at each iteration one can only calculate the value of the function), 1-order methods (at each iteration one can calculate the gradient of the function), 2-order methods (at each iteration one can calculate Hessian of the function). We show how these approaches can be adaptively tune in parameters, that characterized the smoothenes of the function. We also investigate how sensitive are the methods of global optimization to unpredictable error of small level arises on iterations.