

Applications of the PL homotopy algorithm for the computation of fixed points to unconstrained optimization problems

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ABSTRACT.

This paper describes the main aspects of the "piecewise-linear homotopy method" for fixed point approximation proposed by Eaves and Saigal [Eaves, C. B. and Saigal, R., *Homotopies for computation of fixed points on unbounded regions*, Mathematical Programming, **3** (1972), No. 1, 225–237]. The implementation of the method is developed using the modern programming language C# and then is used for solving some unconstrained optimization problems. The PL homotopy algorithm appears to be more reliable than the classical Newton method in the case of the problem of finding a local minima for Schwefel's function and other optimization problems.

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