1106-49-2218   **Sijie Liu*** (`sliu28@crimson.ua.edu`), University of Alabama, Department of Mathematics, Gordon Palmer Hall, Box 870350, Tuscaloosa, AL 35487, and **Min Sun**, University of Alabama, Department of Mathematics, Gordon Palmer Hall, Box 870350, Tuscaloosa, AL 35401. *New Sampling Strategy for Solving Linear Equality Constrained Optimization Problems.* Preliminary report.

A novel interval-based algorithm is proposed for solving global optimization problem with continuous objective function subject to the linear equality constraints over any bounded interval domain. The algorithm uses new sampling procedures by applying Affine Arithmetic and an adaptive Steepest Descent framework, combined with a hybrid step-size estimation. The introduced sampling technique results in improved performance for testing the feasibility in any subdomains and locating a feasible point if the subdomain is nonempty when compared to the basic interval algorithm which only using midpoint sampling strategy. New algorithm has been implemented in C and the numerical results presented demonstrates the robustness and efficiency of the procedures. (Received September 16, 2014)