

1163-49-1502

Milagros Loreto* (mloreto@uw.edu), **Ana Custodio**, **Thomas Humphries** and **Bradford Halter**. *Adjusting a Gaussian Process Model to the GLODS algorithm*. Preliminary report.

The Global and Local Optimization using Direct Search (GLODS) algorithm was proposed for computing all the problems. local minima, from which the global minimum can be easily identified in a constrained case. For the application of this method, no assumptions regarding the smoothness of the function defining the problem are required. The numerical results have shown that GLODS is competitive when compared to commonly-used global derivative-free optimization solvers. In this work, we want to improve the numerical performance of GLODS by incorporating a Gaussian Process (GP) Model that allows reusing the functions evaluations calculated during the poll and search steps. The proposed method includes approaches to calibrate the GP model and to initialize GLODS. We describe the new algorithm structure and report encouraging numerical results. (Received September 15, 2020)