Deterministic optimization assignment

December 15, 2020

The *Rosenbrock's function* is:

$$f(x_1, x_2) := 100(x_2 - x_1^2)^2 + (1 - x_1)^2.$$

The exercise consists in solving the problem of minimizing f over $\mathbb{R}^2$ starting at the point $(-1.5, -1)$. Is this point a good seed?

Compare the two different methods below by explaining towards which point do they converge, and how many iterations are required.

(Where) Is f convex? Are the points obtained a global minimum?

Methods *to program*:

(a) the Conjugate Gradient Method, and

(b) Levenberg–Marquardt.