Homework 22 (Non Smooth Optimization)

Consider and read carefully the attached material:

a)Instructions for running the non-smooth minimization code; (2 files)

b)Paper By Luksan and Vlceck on advanced methods for non-differentiable minimization. Algorithm 811

c)Paper by Claude Lemarechal and Claudia Sagastizabal on
"Variable Metric Bundle Methods from Conceptual to Implementable Forms"

Then run the Fortran code navon_nonsmooth.f implementing the Lemarechal Bundle algorithm.

Describe and write the nondifferentiable convex function being minimized.

Flow chart the code and explain the results.

If you decide to increase number od subgradient components retained you need change all dimension arrays.

Comment on the solution obtained.

Texts recommended for in depth reading on this topic:

1. **Numerical Optimization** :Theoretical and Practical Aspects
   Series: Universitext
   by **Bonnans**, J.F., **Gilbert**, J.C., **Lemaréchal**, C., **Sagastizábal**, C.A.
   2003, XIV, S. 423, Softcover
   ISBN: 3-540-00191-3

2. Kiwiel, K. C., 1985: *Methods of Descent for Nondifferentiable Optimization.* Lecture Notes in Mathematics, Vol. 1133, Springer-Verlag, 362 pp.