SOLab Paper Template

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Abstract

Here is where the abstract should be. In general, abstract has only one paragraph with no equations and figures.

Keywords : put some keywords that you think are relevant to your work, keyword 1, keyword 2

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Nomenclature

a_0 the average rate of change of the objective function.

a_j the average rate of change of the jth constraint function.

c_j the weight coefficient of the jth inequality constraint.

d the size of the subspace, the distance between center and vertex, a half of diagonal.

$d_{\mathrm{c},i}^k$ the size of the kth subspace from ith parent space.

f_* **or** $f_{\min}$ current best function value.

$f_{\mathrm{c},i}^k$ sampling the kth result by SQP from ith parent space in S.A. DIRECT.

g_j^r the violation value of the rth sub space violate the jth constraint.

i the dummy number of design variables($i = 1, \cdots n$).

j the dummy number of the constraint($j = 1, \cdots m$).

K tuning parameter.

l_i the ith design variables lower bound.

lb_i the ith lower boundary.

m the number of all constraint.

n the dimension(or number) of the design variables.

$\mathcal{S}_{\mathrm{p},i}$ the ith parent space, selected from all subspace in S.A. DIRECT.

$\mathcal{S}_{\mathrm{c},i}^k$ the kth subspace(or child space), produced from the ith parent space in S.A. DIRECT.

s_0 the sum of observed rates of change of the objective function.

s_j the sum of observed rates of change of the jth constraint function.

u_i the ith upper bound.

ub_i the distance between sample and the ith upper bound.

x_r sampling point by DIRECT algorithm.

$\mathbf{x}_{\mathrm{c},i}^k$ the kth sampling point by SQP from ith parent space in S.A. DIRECT.

θ the relation of global and local with respect to current optimum.

ε balance parameter, adjusting the process of selecting, avoiding to selecting the subspace too small.

ϵ $\varepsilon \times f_{min}$, the concept likes ε.