

Virtual Library of Simulation Experiments: Test Functions and Datasets

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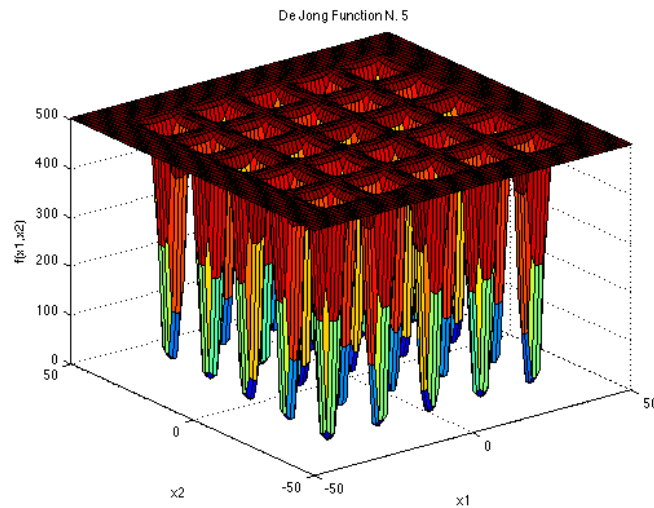
FUNCTIONAL DATA

ABOUT

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Optimization Test Problems

DE JONG FUNCTION N. 5



$$f(\mathbf{x}) = \left(0.002 + \sum_{i=1}^{25} \frac{1}{i + (x_1 - a_{1i})^6 + (x_2 - a_{2i})^6} \right)^{-1}, \text{ where}$$

$$\mathbf{a} = \begin{pmatrix} -32 & -16 & 0 & 16 & 32 & -32 & \dots & 0 & 16 & 32 \\ -32 & -32 & -32 & -32 & -32 & -16 & \dots & 32 & 32 & 32 \end{pmatrix}$$

Description:

Dimensions: 2

The fifth function of De Jong is multimodal, with very sharp drops on a mainly flat surface.

Input Domain:

The function is usually evaluated on the square $x_i \in [-65.536, 65.536]$, for all $i = 1, 2$.

Code:

[MATLAB Implementation](#)

[R Implementation](#)

Reference:

Molga, M., & Smutnicki, C. Test functions for optimization needs (2005). Retrieved June 2013, from <http://www.zsd.ict.pwr.wroc.pl/files/docs/functions.pdf>.

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