OPTIMIZATION OF LARGE-DIMENSIONAL PROBLEMS BASED ON FRACTAL DECOMPOSITION

Optimization problems are ubiquitous in the industrial world. The methods for solving these problems are too complex or give approximate result.

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PRESENTATION

The developed technology allows to solve large dimensional problems and proposes an optimization algorithm based on fractal decomposition. Thanks to a new approach of covering the space, this algorithm allows to solve problems with a large number of variables while bringing an exact answer to the problem. The whole with a very low complexity
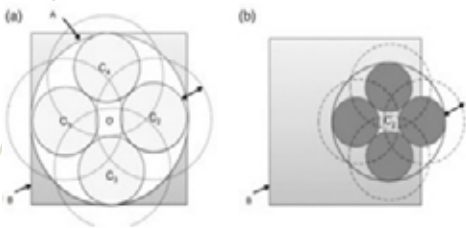

Illustration of the decomposition procedure in the case of a 2D search space

Optimization - Fractal decomposition - Large-dimensional problems

APPLICATIONS

- Supply Chain Optimization
- Forecast Logistic
- Smart and Micro Grids
- Water and electricity distribution networks

DEVELOPMENT PHASE

☑ TRL5 : The algorithm is available in SAAS mode to be tried

COMPETITIVE ADVANTAGES

- Algorithm ranked first in CIFAR-10 dataset
- Solving nonlinear problems with solution accuracy
- Very low complexity of calculations : logarithmic
- Very easy to implement
- Solving problems in a wide range of areas

INTELLECTUAL PROPERTY

European Priority Phase and PCT extension EP & US // WO2018115491

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PUBLICATIONS

Deterministic metaheuristic based on fractal decomposition for large-scale optimization A. Nakiba,*, S. Ouchraaa, N. Shvai a, L. Souquet b, E.-G. Talbi c