

OPTIMIZATION OF LARGE-DIMENSIONAL PROBLEMS BASED ON FRACTAL DECOMPOSITION

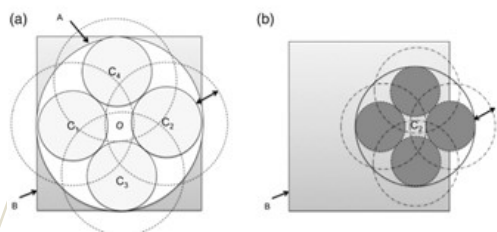
Optimization problems are ubiquitous in the industrial world. The methods for solving these problems are too complex for large problem or give an approximate result.

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PRESENTATION

The developed technology allows to solve these 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 (logarithmic).



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

Optimization - Fractal decomposition - Large-dimensional problems

DEVELOPMENT PHASE

- ✓ TRL5 : The algorithm is available in SAAS mode to be try

INTELLECTUAL PROPERTY

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

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APPLICATIONS

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

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

PUBLICATIONS

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