Overview

This poster presents the HeurisTest platform, carried out in Java, to test the performance of heuristics on benchmark sets:

- Designed following the Simulation Optimization model described in [APRIL and al., 2003b]
- Separates the optimization problem into two main blocks: an optimization metaheuristic and a simulation model
- Allows to select a heuristic and a test function and simulate the function optimization with this heuristic
- Generates the convergence graphs and statistics to evaluate the performance of this heuristic on this function
- Completely modular: dynamically integrates new optimization heuristics, new benchmarks or new experimental protocols

Simulation Optimization Model

- The metaheuristic approach to simulation optimization is based on viewing the simulation model as a black box function evaluator

Conception of HeurisTest Platform

- Using experimental protocols described in [SUGANTHAN and al., 2005] and taken from the CEC’05 conference
- Dynamic class loading: load your own heuristic, benchmark or experimental protocol
- Open source: change or add code to the platform

Getting Started

- Easy to handle: Simple UI

Output Display

- After a simulation, convergence graphs are generated for each run (25 runs per simulation) and the Log Viewer contains error calculation

Output Display Comparison

- Example: Testing PSO and Nelder-Mead (NM) heuristics on Shifted Rosenbrock function for 10-Dimension

Conclusion and Future Work

- Simple and modular platform to compute heuristics performances
- Results computation: convergence graphs and error calculation
- Results comparison: quickly done due to different computed results
- Results of a study, presented in an article submitted to the ISDA’09 conference, were obtained using this platform
- Future work: implementing multi-objective, dynamic and constrained problems
- For further information concerning the platform, visit: http://www.eisti.fr/~vg

References
