

GA and Tabu Search
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Serial and Parallel GA as Function Optimizers

Parallel GA Models

Three categories by the population structure

Global models: SGA, Elitist-SGA, pCHC, Genitor

Tournament selection is used to facilitate parallelism

Island Models:

Massively Parallel Model: Cellular-GA

Test Functions

DeJong's (1975) five test functions: F1 - F5

Rastrigin's function: F6

Schwefel's function: F7

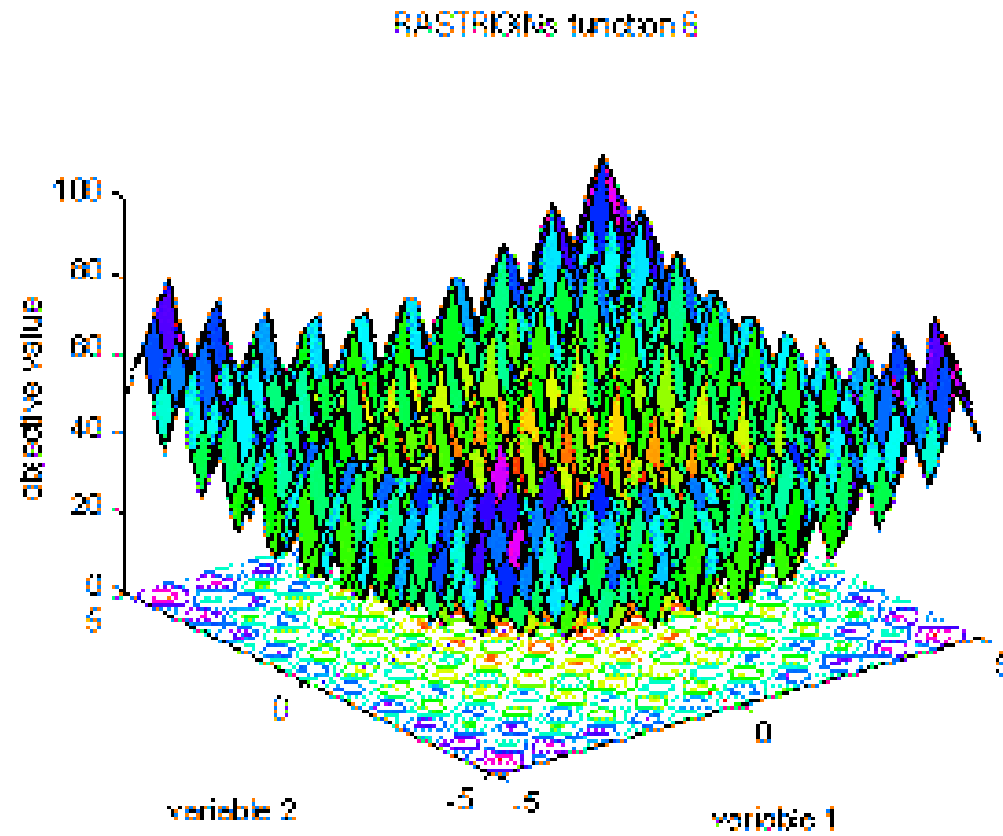
Griewangk's function: F8

Ugly 3-bit and 4-bit deceptive functions

0-1 Knapsack problems

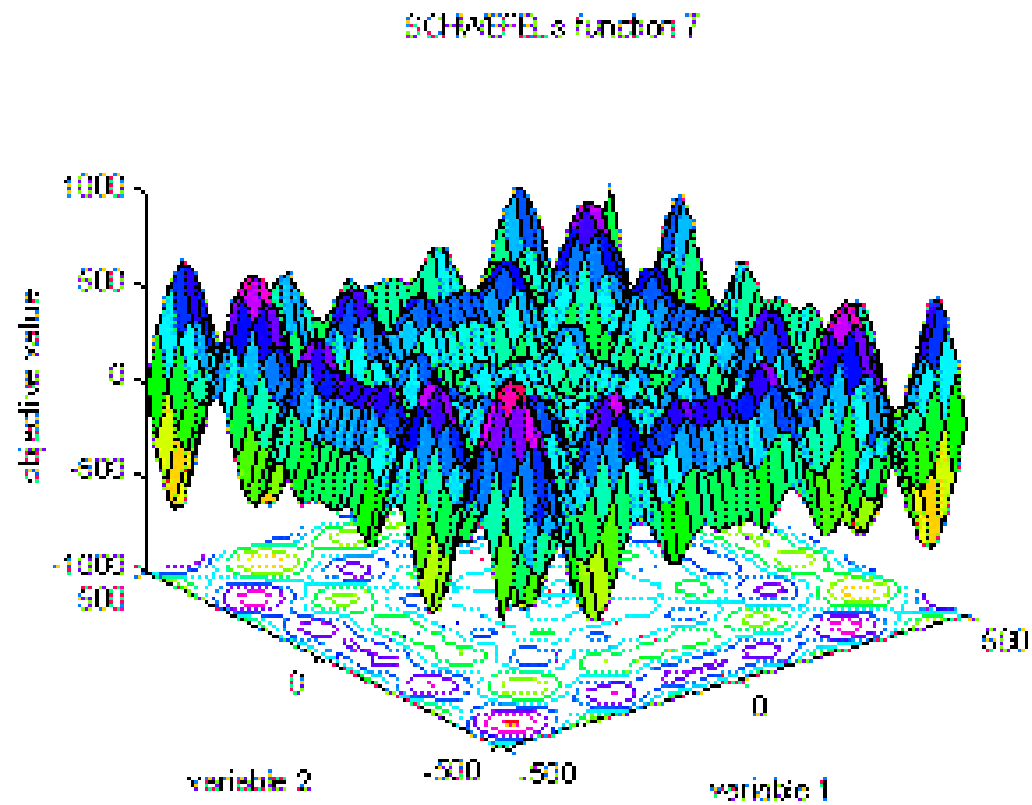
Test Functions

Rastrigin's function: F6



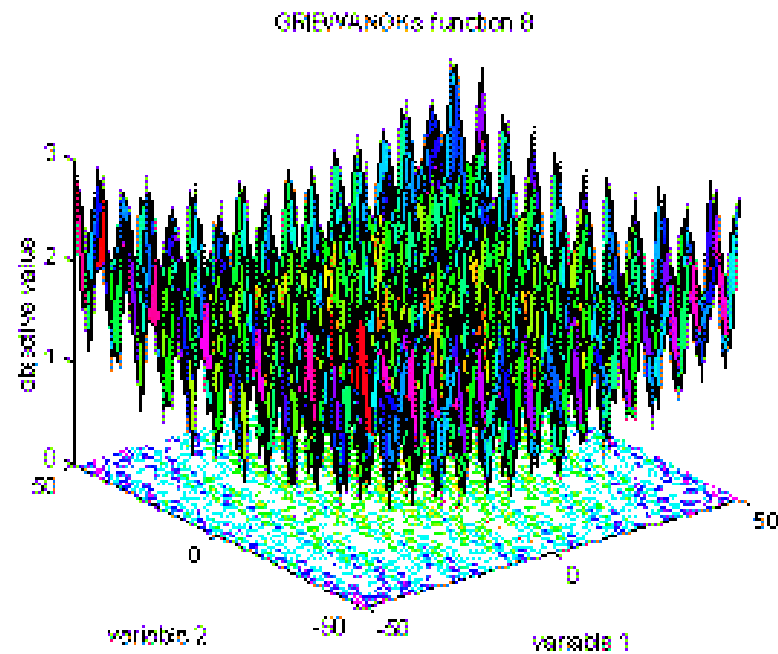
Test Functions

Schwefel's function: F7



Test Functions

Griewangk's function: F8



Conclusion

Elitist strategies perform better than non-elitist ones

Cellular, Genitor, and CHC are at least as effective as
elitist version of SGA

Results for island models are good, especially for
harder problems

SGA is relatively poor compared to the other
alternative algorithms