Real Valued Test Functions
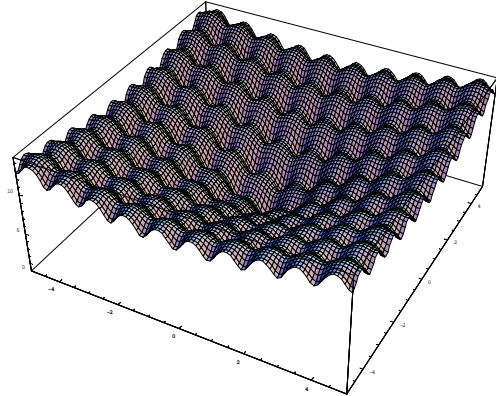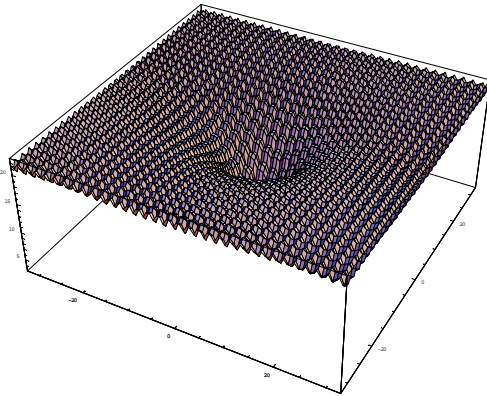
Heuristic and Evolutionary Algorithms Laboratory (HEAL)

June 6, 2008

Ackley Function

$$f(x) = 20 + e - 20 \cdot e^{-\frac{1}{5}\sqrt{\frac{1}{n}\sum_{i=1}^{n} x_i^2}} - e^{\frac{1}{n}\sum_{i=1}^{n}\cos(2\pi x_i)}$$

Dimensions: n
Domain: $-32.768 \leq x_i \leq 32.768$
Global Optimum: $f(x) = 0.0$ at $x = (0.0, 0.0, \ldots, 0.0)$
Operator: AckleyEvaluator
Charts:

Griewangk Function

$$f(x) = 1 + \sum_{i=1}^{n} \frac{x_i^2}{4000} - \prod_{i=1}^{n} cos(\frac{x_i}{\sqrt{i}})$$

Dimensions: n
Domain: $-600.0 \leq x_i \leq 600$
Global Optimum: $f(x) = 0.0$ at $x = (0.0, 0.0, \ldots, 0.0)$
Operator: GriewangkEvaluator
Charts: