

Support

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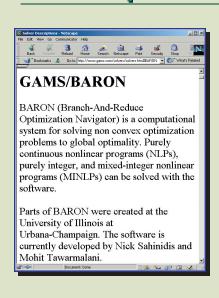
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### **Global Optimization Solver BARON**



Important Application Areas for Global Optimization:

- Reliability
- Parameter Estimation
- Engineering Design
- Economics
- Finance
- Supply Chain Design and Operation
- Molecular Design and Bioinformatics

High performance and reliability of solvers come as a result of technological and theoretical developments in solution technology and modeling systems.

BARON combines constraint propagation, interval analysis, and duality for efficient range reduction while rigorous relaxations are constructed by enlarging the feasible region and/or underestimating the objective function.

#### Branch And Reduce **Optimization Navigator GAMS Models** NLP, DNLP, MINLP Global Model Solution Input BARON Preprocessor · Branch and Reduce Heuristics Convex Relaxations/Local Search GAMS/ GAMS/ GAMS/ MINOS **CPLEX** SNOPT

# LOCAL VERSUS BARON FOR POOLING PROBLEMS A1 A2 A3 A4 B4 B5 F2 F3 F4 F5 H1 H2 H3 RT2 -0.2 -0.4 -0.6 -0.8 -1 -1.2

The darker area of each box is proportional to the difference between the global solution and the best local solution obtained using two local solvers for 14 pooling problems from the literature.

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