# > OPTIMIZATION   www.gams.com <

High-Level Modeling

The General Algebraic Modeling System (GAMS) is a high-level modeling system for mathematical programming problems. GAMS is tailored for complex, large-scale modeling applications, and allows you to build large maintainable models that can be adapted quickly to new situations. Models are fully portable from one computer platform to another.

Wide Range of Model Types

GAMS allows the formulation of models in **many different problem classes**, including

- Linear (LP) and Mixed Integer Linear (MIP)
- Quadratic Programming (QCP) and Mixed Integer QCP (MIQCP)
- Nonlinear (NLP) and Mixed Integer NLP (MINLP)
- Constrained Nonlinear Systems (CNS)
- Mixed Complementary (MCP)
- Programs with Equilibrium Constraints (MPEC)
- Conic Programming Problems
- Stochastic Linear Problems
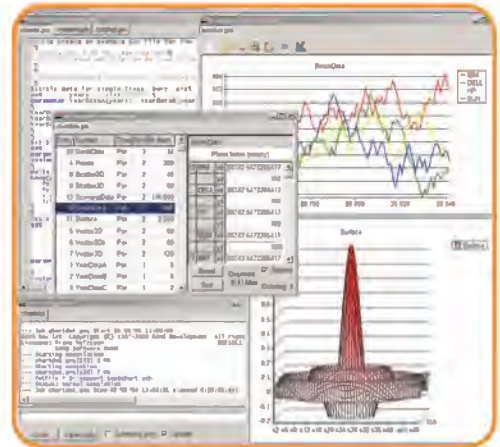
GAMS Integrated Developer Environment for editing, debugging, solving models, and viewing data.

State-of-the-Art Solvers

GAMS incorporates all major commercial and academic state-of-the-art solution technologies for a broad range of problem types, including global nonlinear optimization solvers.

The ERS/USDA China Agricultural Regional Model

The ERS/USDA China Agricultural Regional Model is a dynamic, multi-regional, partial equilibrium agricultural model with graphical tools. The highly non linear model is used to generate 10 year projections of supply, demand, trade, and prices for 24 commodities, 6 major producing regions in China as well as aggregate national level.

- First developments spread sheet based, now model moved to GAMS formulation
- Major parts of the GAMS code are generated automatically
- Automated exchange of data between GAMS and several spreadsheets for scenario analysis and reporting
- For more information about this model please contact: carm@gams.com