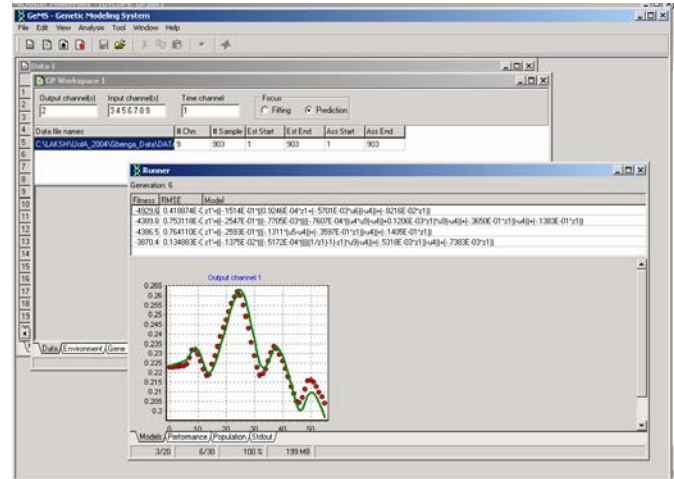


Informatics and Process Control Unit ChemBioSys Group

*Unleashing the power of statistics and systems theory
to characterize and manipulate Chem-Bio systems*

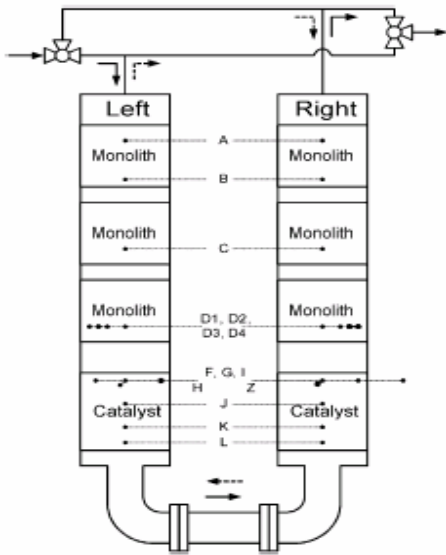
Automated Model Assembly using Genetic Programming

Biological evolution principles provided motivation to develop **GeMS** – a Genetic Modeling System that optimizes the model structure and parameters based on data from linear and nonlinear dynamical systems



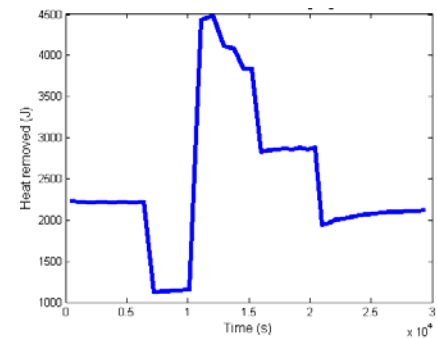
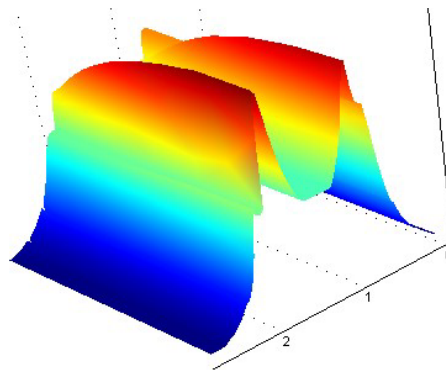
Ongoing Projects

- Optimization of Batch Processes using empirical models derived through GP



Modeling & Control of Hybrid Processes

Optimal operating policies are being established for a reverse flow reactor that combusts harmful greenhouse gases such as methane while simultaneously generating useful energy



Ongoing Projects

- Optimal operation strategies for a Reverse Flow Reactor

Process Variability Analysis

The statistical analysis of time series data generated from chemical and biological systems through well designed experiments can identify opportunities for performance improvement and uncertainty reduction

Ongoing Projects

- Control Loop Performance Assessment for single & multiloop systems
- Transmission of variability in process networks
- DOE for elucidation of biological networks

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ChemBioSys @ NUS

Engineering Systems from Molecules to Multinationals

