Advanced Process Control Solutions

Model Predictive Control & Controller Tuning

ADVANCED PROCESS CONTROL

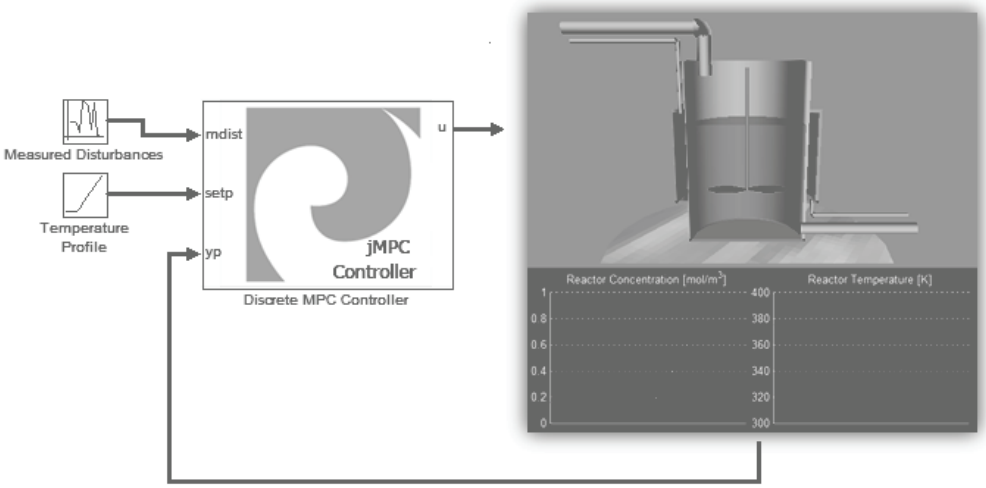
Describes a practice which draws elements from many disciplines ranging from control engineering, signal processing, statistics, decision theory and artificial intelligence.

ONSITE CONTROL TRAINING

Let our team of experienced control engineers come to you and run a tailored course to suit your industry. From PID tuning and simple dynamic models to APC and MPC technologies we have the experience to train your staff.

jMPC Toolbox

The jMPC Toolbox including the GUI can be downloaded from:
http://www.maorielectrical.com/Website/Matlab/jMPC.html



Advanced Process Control

The Industrial Information and Control Centre (I^2C^2) is a strong proponent of Advanced Process Control (APC) in general, and in particular a very powerful controller known as Model Predictive Control or MPC.

The I^2C^2 has been involved in several MPC projects ranging from pulp and paper to oil and gas and dairy industries. Our team also teaches MPC fundamentals at several New Zealand Universities

jMPC Toolbox

Developed by an I^2C^2 research engineer, the jMPC Toolbox is a mature MATLAB® Toolbox which enables research and development of MPC controllers within the powerful MATLAB® environment.

The jMPC Toolbox includes advanced features such as:

- Full Simulink® integration for control of real processes via an external A/D & D/A interface.
- Performance tuned Quadratic Programming (QP) solver.
- Nonlinear simulations using Ordinary Differential Equation (ODE) models with automatic linearization.
- Advanced MPC features such as control move blocking, soft constraints and measured disturbance control.
- Classroom focused Graphical User Interface (GUI) for teaching MPC.

INDUSTRIAL INFORMATION & CONTROL CENTRE

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THE UNIVERSITY OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

AUT UNIVERSITY
AUCKLAND, NEW ZEALAND

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I^2C^2

Advanced Process Control Solutions

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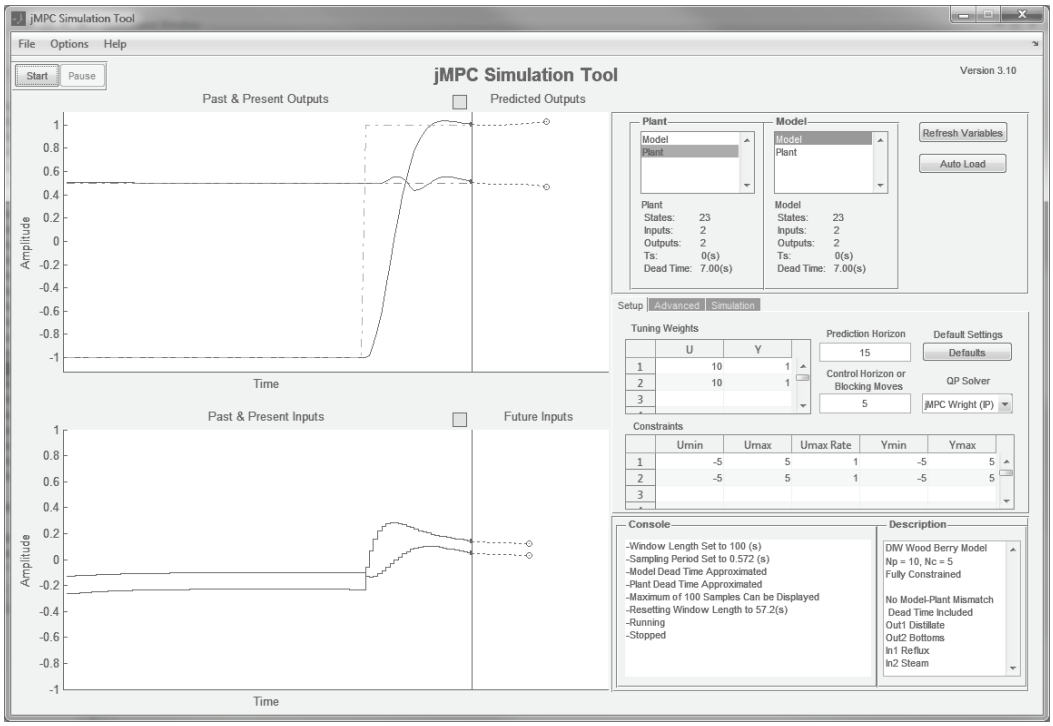

Technology Benefits

Model Predictive Control has widely been recognised as the most valuable advanced controller available to date. However the implantation and maintenance of such a controller requires significant resources and expertise.

The I2C2 team has an active research group of around 10 PhDs across two universities with strong external and industrial links. Leveraging off our in house expertise we can assist implementation, tuning and maintenance of Advanced Process Control at your facility.

Currently the team is investigating the creation of support software to assess in real-time which models are suitable for MPC, what architecture one should use, and continually monitor the controller's performance for a major dairy client in New Zealand.

Industrial Information & Control Centre

The Industrial Information and Control (I^2C^2) is a joint collaboration between AUT and the University of Auckland and was established in 2007. Our team is multidisciplinary group of chemical, mechanical, and electrical engineers with backgrounds from pulp and paper to dairy, aluminium and biotechnology.

I^2C^2 SERVICES AVAILABLE

- System Modelling
- Software Design
- APC Tuning & Assessment
- Onsite Training
- Software Installation and Setup
- Technical Support

Industrial Information & Control Centre
The University of Auckland & AUT University
Auckland, New Zealand

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INDUSTRIAL INFORMATION & CONTROL CENTRE

MORE INFORMATION

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