Control Design

Maplesoft
Engineering Solutions

Reduce Development Risk. Create Better Products. Get to Market Faster.

Maplesoft Engineering Solutions provide you with the tools and expertise you need for both plant modeling and control design. Offering a unique approach that leverages symbolic technology, Maplesoft Engineering Solutions provides greater flexibility and more analysis options than are available using traditional tools alone.

- **Accelerate your design process**
  - » Advanced system-level modeling environment that dramatically reduces development time of your plant models, provides greater insight into system behavior, and produces fast, high-fidelity simulations
  - » Integrated tools for rapid system linearization, stability analysis, and control design using classical techniques
  - » Highly optimized code generation for easy deployment to the rest of your toolchain
- **Bring rigor and power to your model development and analysis with advanced symbolic techniques**
  - » Equation extraction and parametric analysis tools: Sensitivity, Monte Carlo, optimization, and more
  - » Inverse kinematics and dynamics of multibody mechanisms
  - » Rigorous mathematical tools for model manipulation, simplification, and order reduction
- **Achieve greater flexibility and accuracy in your controllers with advanced control design solutions**
  - » System identification and parameter estimation
  - » Controllability and observability analysis
  - » State estimation (Kalman, Akermann, Luenberger, etc.)
  - » Non-linear systems analysis
  - » Symbolic model-order reduction for non-linear Model Predictive Control (MPC) development
  - » Development of specialized control-design tools

Past Projects

Maplesoft specializes in the modeling, simulation, optimization, and control of complex multidomain systems. Past projects include:

- Wind turbines: Blade pitch angle control
- Electrical power inverters: Pulse width modulation (PWM) switched-circuit control
- Voice coil linear actuator: Displacement control
- Tracking radar gimbal: Inverse kinematics and azimuth/elevation actuator control
- Battery management systems: State-of-charge and temperature control

Talk to a **Maplesoft Engineering Solutions expert** to learn how we can help you with your design projects.

Products

With **Maple**, **MapleSim**, and the **MapleSim Control Design Toolbox**, you can reduce development time, gain greater insight, and develop superior controllers for your design projects.

MapleSim
Maple

Services

With expertise in a variety of engineering fields and extensive experience in model-based design, **Maplesoft experts** are available to help you solve your engineering design problems.

MAPLESOFT SERVICES

Maplesoft
Mathematics • Modeling • Simulation
A Cybernet Group Company

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