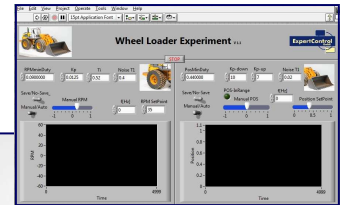ExpertControl GmbH

Feedback Control Experiments

Wheel Loader in the Test Bench

- Two Control Loops in one Experiment
- Ready to Use as Stand alone System or with MATLAB®/Simulink®

Data acquisition, PWM actuator, design of two closed-loop systems: bucket positioning and wheel speed control.

Multi Tank System

- Advanced Linear and Nonlinear Control Methods
- Control strategies ranging from PID to adaptive or fuzzy controllers

Reach and stabilize desired levels in the tanks by adjusting the pump operation or/and valves settings.
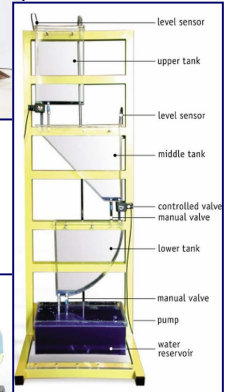
Truck in the Test Bench

- Introduction of fundamental mechanical behavior including friction/stiction effects and basic controllers
- Easy-to-use and ready-to-use platform

The basic graphical user interface with its underlying control algorithm may be used in the MATLAB®/Simulink® environment as well.

3D Crane

- Design and operation of linear servo position and speed controllers (PID, LQR)
- Method of rapid prototyping of user-defined controllers

Laboratory system imitating an industrial gantry crane and can move independently in three perpendicular directions.
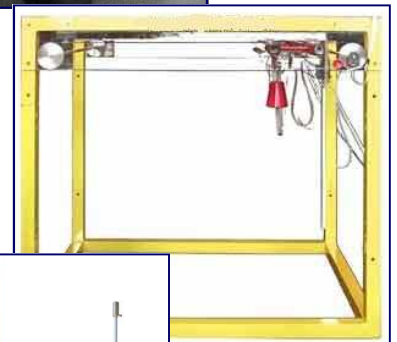
Pendulum

- Fourth Order, Nonlinear and Unstable Real-Time Control System
- Full integration with MATLAB®/Simulink®

Bring the rod into a vertical position and has to balance it while moving on the rail.
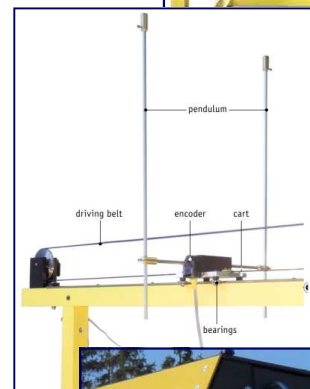
Unmanned Off-Road Vehicle

- 6x6 drive train with industrial gearboxes and powerful motors
- Handle dirt, mud, water, gravel, rocks and snow
- Hot-swap battery system

An open low-level communication protocol gives total data access to ensure all variables are well documented for your research.

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