



17-19 October, Greater Concepción, Chile

IEEE ICA - ACCA 2018

IEEE International Conference on Automation /
XXIII Congress of the Chilean Association of Automatic Control

TOWARDS AN INDUSTRY 4.0

IMPLEMENTING MODELING TOOLS WITH ADOXX

Author Marcelo Esperguel S
Membership Universidad de la Frontera

Date 17-10-18
14:30-16:30
Duration 2 hours
Language Spanish

Description

This tutorial will be focus on the first steps to use of ADOxx software, including

1. Preparation of the modeling language:
 - Selection of a domain.
 - Creation of a metamodel.
2. Creation of the modeling library of the chosen domain:
 - Explanation of the ADOxx interface.
 - Insertion of metamodel in ADOxx.
 - Implementation of graphic representation of the elements of the models.
 - Test library with the modeling environment.
 - Add example restrictions on models using ADOScript.

Requirements

1. Laptop.
2. ADOxx.
3. Basic knowledge of:
 - Modeled and Metamodel.
 - UML (Unified Modelling Language).
 - OCL (Object Constraint Language).



17-19 October, Greater Concepción, Chile

IEEE ICA - ACCA 2018

IEEE International Conference on Automation /
XXIII Congress of the Chilean Association of Automatic Control

TOWARDS AN INDUSTRY 4.0

LINEAR PARAMETER VARYING CONTROL WITH LPVTOOLS

Author Alejandro S. Ghersin
Membership Instituto Tecnológico de Buenos Aires

Date 17-10-18
17:00-19:00 **Duration** 2 hours **Language** English/Spanish

Description

The main focus of this tutorial will be on Linear Parameter Varying (LPV) Systems and Control, the topics to be addressed are:

1. Uncertain systems and Linear Fractional Transformations (LFTs).
2. LPV systems norms, analysis and synthesis conditions based upon Linear Matrix Inequalities (LMIs).
3. Weighting functions and their use for Control Design in Robust and LPV systems.
4. LPVTools:
 - System representation in LPV tools.
 - Gridded Systems.
 - LFT Systems.
 - Simulation of LPV systems in simulink.
 - Design Examples.

Requirements

1. Laptop
2. Matlab
3. Simulink
4. LPVTools package



V-REP AS A VIRTUAL PLATFORM FOR EXPERIMENTATION IN AUTOMATION AND CONTROL

Authors Claudio Morales Díaz
Carlos Santibañez
Membership Universidad Tecnológica de Chile

Date 18-10-18 **Duration** 4 hours **Language** Spanish
14:30-19:00

Description

This tutorial will be focus on the V-REP software for robotics and automation applications, including

1. Basic functions of V-REP
 - Simulation of automation, control and robotics systems.
 - Interaction from the user interface.
2. Advanced functions of V-REP
 - Interconnection to software and external hardware.
 - Examples with MATLAB and real devices.

Requirements

1. Laptop.
2. V-REP.
3. Matlab.