

HEPTech Academia-Industry Matching Event on Technology of Controls for Accelerators and Detectors

Title: EcosimPro: Dynamic Simulation Tool and its application to Control

Speaker: Ana Veleiro Blanco

Abstract:

The presentation shows the different features of the simulation tool EcosimPro and its application to control.

EcosimPro was born in the frame of the ESA (European Space Agency) aerospace program and its domain of application covers areas in the Space Sector: Environmental Control and Life Support Systems (ECLSS), Space Propulsion (Launchers and Satellites), Satellite Power Systems, in the Aeronautical Sector (PROOSIS as a spinoff of EcosimPro via EU R&D programs): Vivace and Crescendo: Gas Turbines , Motor and Aircraft Systems, in the Energy, Water and Process Sectors (as a natural continuation of EA activities for thermal and nuclear power plants): Cryogenics (with CERN), Tritium diffusion phenomena in the Test Blanket Modules (TBM) and in the Tritium Plant (with Spanish CIEMAT), and Hydraulics for cooling systems simulation for the ITER project, Power Plant Systems, Waterhammer, Reverse Osmosis, Thermosolar Power Plants, Oxycombustion Power Plants, etc.

The application to control area includes: advanced control, modeling of controllers, offline validation, operators training and virtual commissioning. Several industrial examples will be provided.

Plan:

- Introduction to the technology
- Features: domains of application (with examples)
- Application to control: modeling of controllers, offline validation, operators training and virtual commissioning