

Advanced Control Systems Research at UPC Terrassa Campus

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ABSTRACT

Advanced Control Systems (SAC) is a multidisciplinary research group involving UPC professors and Spanish National Research Council (CSIC) researchers, focused on the wide subject of control and supervision of dynamic systems. The group uses theory of signal/systems tools, modelling, simulation and optimization in order to face real problems of systems and automated processes, specifically in the next subjects:

- Optimal/predictive control of large scale systems (mainly related with water cycle)
- Data validation
- Fault diagnosis
- Fault tolerant control system design
- Dynamic system monitoring and maintenance aiding
- Advanced control systems design, mainly focused on UAV control

The activities of research of the SAC group are framed in what today is known as TIC technologies, and their main objective is to develop tools that allow to improve the functioning of systems (aerogenerators, cars, airplanes, UAVs, etc.) and complex technological processes, (networks of water distribution, management of water quality, etc). It is understood as an improvement from the fact of achieving certain benefits of operation, until the planning of tasks in order to reduce costs or improving environmental aspects.

Keywords: Water distribution networks, calibration, modeling, Matlab, software.