

Department of Electrical Engineering

Professor

CTS-Uninova
Unit B2 - Intelligent Control and Decision Support Systems



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Professor at DEE and researcher at CTS-UNINOVA. His current research interests are on fault tolerant control systems and remote control systems.
<http://docentes.fct.unl.pt/lbp>

Objectives

Research in the following areas:

- ✓ Fault Detection and Fault Diagnosis in Dynamic Systems (Fig. 1)
- ✓ Control Loop Performance Monitoring and Supervision
- ✓ Fault Tolerant Control Systems Design (Fig. 2)
- ✓ Remote Control Systems.

Advanced education

- ✓ M. Sc. (MIEEC, MEESC) and PhD courses (PDEEC).

Perform Technology transfer:

- ✓ Collaboration with national and international companies.

Methodology

The approaches for research are, mainly, based on:

- Black-box models, system identification
- Principal component analysis (PCA, Fig. 3), multivariate statistics
- Fuzzy logic
- Neural networks
- Optimization algorithms.

Fundamental and Applied Research, and advanced education in collaboration with national and international Universities and research centers.

Expected Results

Development of integrated solutions for fault tolerant control systems and remote control systems.

Publications in major international journals and conferences.

Collaboration with national and international companies.

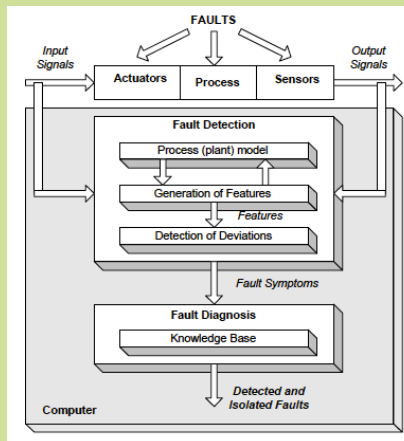


Fig. 1 – FDD.

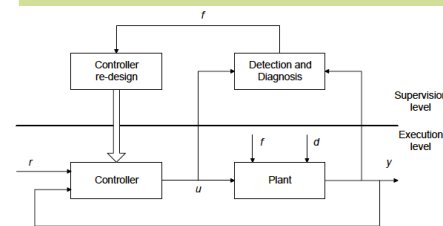


Fig. 2 – FTC.

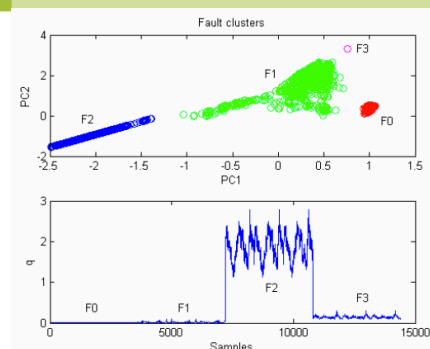


Fig. 3 – PCA.