Polynomial control

Component
École Nationale Supérieure d'Électrotechnique d'Électronique d'Informatique d'Hydraulique et des Télécommunications

In brief

- **Ametys Code:** N8EE16A
- **Open to exchange students:** Yes

Presentation

Objectives

Master the design of synthesis methods for defining discrete control laws to be implemented on a digital computer

Description

I Introduction and General Information
Brief history

Structure of a digital control system
Representation of discrete linear systems
II Frequency approach
Digitisation of standard controllers
Direct frequency synthesis
III Synthesis of digital controllers
Formalism and notation
Generalised controller
The RST controller

The Smith predictor

IV Synthesis of a discrete state feedback

Pole placement

Addition of an integral action

V Discrete state observers

Full-order observer

Reduced-order observer

VI Anti-saturation devices

Pre-requisites

Z-transform

Sampled systems

Continuous linear control systems