

**SPECTRAL METHODS AND PLANT-WIDE APPROACHES IN
CONTROL LOOP PERFORMANCE ASSESSMENT
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Nina Thornhill

Department of E&E Engineering, University College London, Torrington Place, London,
UK, WC1E 7JE

www.ee.ucl.ac.uk/~nina

Assessment of performance of single-input-single-output loops using spectral methods

- ◆ Motivational introduction to control loop performance assessment from industrial case studies.
- ◆ Control loop performance evaluation and diagnosis via spectral analysis of data.

Plant-wide disturbance and root-cause diagnosis:

- ◆ Plant wide disturbances: A faulty control loop can cause widespread process disturbance. Industrial examples will be presented to motivate the detection of plant-wide disturbances and diagnosis of the root cause.
- ◆ Detection of plant wide disturbances: Techniques will be presented to detect measurements at various places in a plant which are influenced by the same process disturbance. Both oscillating and non-oscillating plant-wide disturbances will be covered.
- ◆ Diagnosis of plant wide disturbances: A published case study with Eastman Chemicals will be presented showing how the root cause of a plant-wide disturbance was isolated.

Materials to be provided:

- ◆ MATLABTM programs together with data and step-by-step instructions to complete worked examples in SISO control loop performance assessment and diagnosis.
- ◆ Handouts of the presentation slides.