



Department of Automatic Control & Systems Engineering  
would like to announce the following seminar:

***Sampled-data Control of Distributed Parameter Systems'***

***Speaker: Professor S.B.Townley***

**School of Engineering, Computer Science, and Mathematics,  
University of Exeter**

**Wednesday 18 April 2007  
at 14:10**

**Location: St Georges Mappin Building LT4**

Tea and Biscuits will be served afterwards.

**ABSTRACT**

This talk is in three parts. 1. An overview of sampled-data control for distributed parameter systems including: fundamental necessary conditions which must hold for stabilisation by sampled-data control to be possible; notions of open-loop stabilization and stabilization by generalised hold; robustness vs. non-robustness of continuous-time static/dynamic feedback stabilisation with respect to sufficiently small sampling times. 2. Some recent results on generalised-hold sampled-data stabilisation of well-posed linear systems and robustness of continuous-time state feedback stabilisation of Riesz spectral systems with respect to sampling. 3. An overview of 'Open Problems in Sampled-data Control for distributed parameter Systems'. In the 'robustness with respect to sampling' context there is a gap between the necessary conditions for sampled-data stabilization and the known sufficient conditions. We will explore the limitations of the existing results and ideas for ways forward. The analysis of this fundamental problem emphasises how an approach that mixes state-space and input output approaches is needed in the sampled-data setting.