**11th February Monday: 12.00-13.00, Room: C164**

**Speaker: Dr** **William Heath**

Control Systems Centre,University of Manchester

**Systems & Control:** *“New results for the analysis of Lur'e systems”*

**Abstract:** Determining the stability of Lur'e systems is a classical problem and directly relevant to feedback systems with actuator constraints. In this talk we will revisit some classical results and tools. In particular we will reconsider the Kalman conjecture for discrete-time systems and derive a convex search for discrete-time Zames-Falb multipliers. We are particularly interested in the interpretation of L2 input-output stability in the presence of step demands or step disturbances. We derive a generalised class of Zames-Falb multipliers that can be used to guarantee stability for such systems. We illustrate with some simple but perhaps surprising examples.

**Biography:** William Heath heads the Control Systems Centre. He is a Reader in the School of Electrical and Electronic Engineering. He received a BA in Mathematics from Cambridge University in 1987. He received an MSc in Systems and Control and a PhD from the Control Systems Centre, UMIST, in 1989 and 1992 respectively. He continued at the Control Systems Centre until 1994, and was then with Lucas Advanced Engineering Centre until 1998. From 1998 to 2004 he was a Research Academic with CIDAC, University of Newcastle, Australia. He returned to the University of Manchester in 2004.He serves on the Editorial Board for the IET Journal on Control Theory and Applications and on the IEEE Control Systems Society Technical Committee for System Identification and Adaptive Control. He is a Member of both the IEEE and the IMA.