

# Some Open Questions in Scalability of Multi Agent Dynamic Systems

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**Date: 5 December 2023 (Tuesday)**

**Time: 10:30 am**

**Venue: P4302 (Purple Zone), 4/F,  
Yeung Kin Man Acad Building**

### Abstract

There has been much work in relation to multi agent systems over many years. Yet some fundamental issues seem very difficult to both formulate clearly, and solve. In this talk I will look at some examples and analysis for which I am not aware of a clean solution. This will start with questions such as:

- (i) does asymmetry “help” in improving networked control?
- (ii) can we extend frequency domain sensitivity trade-offs work from strings to networks?
- (iii) are there simple, rigorous bounds on algebraic connectivity of families of graphs formed recursively?

### Biography

Professor Richard H. Middleton completed his Ph.D. (1987) from the University of Newcastle, Australia. He was a Research Professor at the Hamilton Institute, The National University of Ireland, Maynooth from May 2007 till 2011, Head of the School of Electrical Engineering and Computing at the University of Newcastle 2015- July 2020 and former Director of the ARC Training Centre for Food and Beverage Supply Chain Optimisation, and ARC Centre of Excellence for Complex Dynamic Systems and Control. He has served as Program Chair (CDC 2006), co-general chair (CDC 2017) CSS Vice President Membership Activities, and Vice President Conference Activities. In 2011, he was President of the IEEE Control Systems Society. He is a Fellow of IEEE, IFAC, and Engineers Australia. He is an emeritus professor at the University of Newcastle, and his research interests include a broad range of Control Systems Theory and Applications, including Communications Systems, Control of distributed systems, Optimisation and Systems Biology.

**All are welcome**

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