Hamilton Institute

E=mc^2: Energising Wireless Mesh Networks with Multipath Code Casting

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Abstract

Wireless mesh networking is seen as a promising paradigm to offer cost-effective networking, with diverse applications from disaster relief to enabling an all-wireless office. However, designing high-throughput wireless mesh networks is a challenge, due to their bandwidth constraints and shared medium. This involves solving interrelated scheduling, routing and interference problems. In this work, we exploit the fundamental properties of broadcast medium and path diversity in wireless meshes to implement multipath routing between a source and destination pair. Our approach is to use network coding as a technique to ease the scheduling problem exploit diversity and deal with unreliable transmissions.

In this talk, I will describe our multipath forwarding algorithms and discuss design issues. Analysis and preliminary results from a prototype testbed implementation show benefits of our approach over existing approaches.

Biography

Wenjun Hu is a PhD student at the University of Cambridge Computer Laboratory. Her main interests are in wireless and mobile networks, with a current focus on using network coding to improve the throughput of wireless mesh networks. She has interned at IBM Zurich Research Lab and EML Research prior to her PhD, and more recently at the MIT Computer Science and Artificial Intelligence Lab and Microsoft Research, Cambridge.

Venue: Seminar Room, Hamilton Institute, Rye Hall,
NUI Maynooth

Time: 1.00 - 2.00pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

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