



**UCD School of  
Mathematics and Statistics**

University College Dublin  
Belfield, Dublin 4, Ireland

Tel +353 1 716 2580  
Fax +353 1 716 1196

**Scoil na  
Matamaitice agus na Staitisticí UCD**

An Coláiste Ollscoile, Baile Átha Cliath  
Belfield, Baile Átha Cliath 4, Éire

Email seminars@maths.ucd.ie  
Web [maths.ucd.ie/seminars](https://maths.ucd.ie/seminars)

## Algebra and Number Theory Seminar

---

**Dr Akiko Manada (Sch. Math Sci., UCD )**

will speak on

### **A Graph Theoretical Approach for Wireless Body Area Networks**

**Mon 7th February 2011 at 4:00PM**

**Location: Mathematical Sciences Seminar Room**

Modern medical wireless systems, such as Wireless Body Area Networks (WBANs), are applications of wireless networks that can be used as a tool to send data between clients and medical personnel. In a WBAN, miniature sensors attached to a patient send health information (eg. heart rate, body temperature, etc.) to a monitoring station via relays, offering frequent updates of a patient's state. Accuracy of data is strongly demanded for WBANs, while any encoding/decoding scheme should be simple enough to be used by low-power devices. In this talk, we present a WBAN coding scheme robust to packet erasures, generalizing a scheme proposed by S. Mirankovic and E. Popovici. We consider a graph representation of the coding model and discuss its decoding probability, a measure of its robustness against packet erasures. We outline some properties of graphs with good performance.

This talk is part of the **Algebra and Number Theory** series. For more, see  
<https://maths.ucd.ie/seminars>