

IMIA Operator Algebra Seminar
University of Wollongong

Title: Spectral Metric Spaces For Gibbs Measures

Speaker: Tony Samuel (Australian National University)

Time and Dates: 3:30pm, Thursday, 24 November 2011

Location: Room 15.113 (Access Grid Room)

Abstract: The common idea of Connes' Non-commutative Geometry is to represent a geometric object by an operator algebra and in doing so one is able to build an analogue of a differential structure for these operator algebras. Connes showed that the starting point in forming such a theory is to form a spectral triple.

In this talk we will show how one can construct a spectral triple which will represent a sub-shift of finite type Σ equipped with a Gibbs measure μ . Specifically, we will construct a spectral triple from which one can recover both geometry of Σ as well as the measure μ . Since sub-shifts of finite type can be used to represent a wide variety of fractal sets, the theory we will present will allow one to begin to describe an analogue of a differential structure for a wide class of fractal sets.

I will try to present the material so that no prior knowledge of non-commutative geometry or fractal geometry will be required.