

IMIA Operator Algebra Seminar
University of Wollongong

Title: Noncommutative circle bundles and new Dirac operators

Speaker: Andrzej Sitarz (Jagiellonian University, Poland)

Time and Dates: 3:30pm, Thursday September 15, 2011

Location: Room 1.G03

Abstract: Motivated by the classical situation of circle bundles we study the spectral triples over the total space of noncommutative principal $U(1)$ bundles. We propose a definition for a connection and compatibility between the connection and the Dirac operator. We analyze in details the example of the noncommutative three-torus and we find a family of new Dirac operators on the noncommutative tori, which arise from the base-space Dirac operator and a suitable connection. For a noncommutative two torus we propose a (baby) Gauss-Bonnet theorem (for some of the operators found). This is joint work with Ludwik Dabrowski