

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE  
UNIVERSITY OF SOUTHERN DENMARK, ODENSE

## Mathematics seminar

Jens Kaad  
IMADA, SDU

### Morita equivalences of spectral triples

Thursday 14 April 2016, 14:15-16:00  
U11

#### Abstract

Classically, two algebras are Morita equivalent when they are linked by a pair of finitely generated projective bimodules via the module tensor product. In particular two such algebras will have the same representation theory. At the  $C^*$ -algebraic level this concept was extended by Marc Rieffel using the interior tensor product of  $C^*$ -correspondences and the extra analytic flexibility then allows for the use of modules with infinitely many generators. The idea that Morita equivalent algebras should also have the same non-commutative geometry (meaning that they admit the same spectral triples) has been successfully applied to the algebraic case where the correspondence takes place via a finitely generated projective module. In this talk I will show how the unbounded Kasparov product can be applied to obtain Morita equivalence results for spectral triples via infinitely generated modules. As an application we shall see that the following pairs of objects admit the same (twisted) spectral triples: Two Riemannian manifolds with conformally equivalent metrics. A hereditary subalgebra and its full algebra. The crossed product of a discrete group acting on a manifold and the quotient manifold.

Host: David Kyed