

Fell bundles and higher Dixmier-Douady theory

Ulrich Pennig

Certain saturated Fell bundles can be viewed as 2-categorical bundles where the fibre is the tensor category with objects given by the Morita equivalences of a fixed C^* -algebra and the morphisms are the unitary intertwiners. In the talk I will present a construction, which is joint work with David Evans, that produced interesting examples of such Fell bundles over the Lie groups $SU(n)$. They are equivariant with respect to an action that lifts the conjugation action of the group on itself. I will discuss how these examples fit into the context of higher Dixmier-Douady theory and how they expand classical results by Freed, Hopkins and Teleman in twisted K-theory.

Bio: Ulrich Pennig is a German mathematician, who earned his doctorate from the Georg-August Universität, Göttingen in Germany in 2009 under supervision of Thomas Schick. He then had two post-doc positions: in Göttingen (at the Courant Research Center) and at the WWU Münster (as "akademischer Rat auf Zeit"). In Münster he finished his Habilitation and became a lecturer in Algebra and Topology at Cardiff University in 2016. He is currently senior lecturer at Cardiff University. His research interests include operator algebras and algebraic topology, in particular the study of the homotopy type of the automorphism groups of C^* -algebras.