

Principal bundles in noncommutative Riemannian geometry

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Noncommutative topological principal bundles, e.g., noncommutative circle bundles, are ubiquitous in theory of C^* -algebras. However, applications to mathematical physics, especially noncommutative generalisations of gauge theory, motivate a refinement of this notion to noncommutative Riemannian geometry in terms of spectral triples. In this talk, I'll sketch the resulting theory as it applies to noncommutative Riemannian circle bundles with orbits of constant length. This is based on joint work with Bram Mesland.