

# BIMODULE CONNECTIONS FOR LINE BUNDLES OVER IRREDUCIBLE QUANTUM FLAG MANIFOLDS

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Abstract:

Connections on vector bundles are a fundamental tool in classical differential geometry. When we generalize their definition to noncommutative differential geometry, we are led to consider bimodule connections. In this talk I will present a construction of bimodule connections for line bundles over a large class of quantum homogeneous spaces, namely the quantum flag manifolds. Generalizing the work of Beggs and Majid for the Podleś sphere, we realize bimodule connections as associated to a principal connection for the Heckenberger-Kolb calculus. Time allowing, I will review explicit presentations of the associated bimodule maps first in terms of generalised quantum determinants and then in terms of Takeuchi's categorical equivalence for relative Hopf modules.