

## Dirac Operator on Fuzzy Sphere with U(1) Dirac Monopole Background

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Abstract: We treat the Dirac operator on the Fuzzy sphere with the help of the generalized coherent state. It is shown that the derivatives can be constructed by Moyal product with symbol of the operator. We obtain the eigenvalue of the free fermion Dirac operator as same as the result by [Hajime Aoki, Satoshi Iso, and Kelichi Nagao, Phys. Rev. D67 (2003) 065018]. Meanwhile, we also give the eigenvalue of Dirac operator with U(1) Dirac monopole background.

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Key words: noncommutativity, Dirac operator, Moyal product symbol

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