

Brice Flamencourt: Dirac operators with large masses.

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We consider a particular class of Dirac operators with a potential interpreted as masses in separated regions of space. These operators appear naturally in the study of the MIT Bag model in dimension 3. We are interested in the behaviour of their eigenvalues when the masses become large.

This problem admits a generalization in higher dimensions, and it can also be considered from the point of view of spin geometry. We recall the construction of the Dirac operator on spin manifolds, so we can define a generalized MIT Bag Dirac operator for which we obtain convergence results in certain asymptotic regimes.