

Axial Anomaly for Eguchi -Hanson Metrics with Nonzero Total Mass

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Abstract: We compute the Dirac indexes for the two spin structures k_0 and k_1 for Eguchi -Hanson metrics with nonzero total mass. It shows that the Dirac indexes do not vanish in general, and axial anomaly exists. When the metric has zero total mass, the Dirac index vanishes for the spin structure k_0 , and no axial anomaly exists in this case.

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Key words: axial anomaly, Eguchi -Hanson metric, total mass

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