ON THE EIGENVALUES OF THE TWISTED DIRAC OPERATOR

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RESUMO. Given a compact Riemannian spin manifold with positive scalar curvature, we find a family of connections ∇^{A_t} for $t \in [0,1]$ on a trivial vector bundle of sufficiently high rank, such that the first eigenvalue of the twisted Dirac operator D_{A_t} is nonzero and becomes arbitrarily small as $t \to 1$. However, if one restricts the class of twisting connections considered, then nonzero lower bounds do exist. We illustrate this fact by establishing a nonzero lower bound for the Dirac operator twisted by Hermitian-Einstein connections over Riemann surfaces.

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