NONCOMMUTATIVE POTENTIAL THEORY AND THE SIGN OF THE CURVATURE OPERATOR IN RIEMANNIAN GEOMETRY.

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ABSTRACT. The aim of this work is to show that in any complete Riemannian manifold M, without boundary, the curvature operator is nonnegative if and only if the Dirac Laplacian D^2 generates a C*–Markovian semigroup (i.e. a strongly continuous, completely positive, contraction semigroup) on the Clifford C*–algebra of M or, equivalently, if and only if the quadratic form $\mathcal{E}_D$ of D^2 is a C*–Dirichlet form.

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