Mathematics > Differential Geometry

The Energy-Momentum tensor on $Spin^c$ manifolds

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On $Spin^c$ manifolds, we study the Energy-Momentum tensor associated with a spinor field. First, we give a spinorial Gauss type formula for oriented hypersurfaces of a $Spin^c$ manifold. Using the notion of generalized cylinders, we derive the variationnal formula for the Dirac operator under metric deformation and point out that the Energy-Momentum tensor appears naturally as the second fundamental form of an isometric immersion. Finally, we show that generalized $Spin^c$ Killing spinors for Codazzi Energy-Momentum tensor are restrictions of parallel spinors.

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