

The Spin group and Spin^c , the metaplectic group and Mp^c

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If a vector space is endowed with a positive definite scalar product, the Spin group is the universal (double) cover and Spin^c is a circle extension of the special orthogonal group. If a vector space is endowed with a non degenerate skewsymmetric bilinear form, the metaplectic group is the double cover and Mp^c is a circle extension of the symplectic group.

This review talk presents those circle extensions in a parallel way, as intertwiners of natural irreducible representations of associated Clifford algebras. The existence of a compatible almost complex structure implies the existence of corresponding Spin^c or Mp^c structures on a Riemannian even dimensional or a symplectic manifold.