Clifford algebras of $\mathcal{O}_X$-quadratic spaces

P.P. Ntumba, C. Ndipingwi

Abstract

In the classical theory of quadratic forms and Clifford algebras, it is a well known result that, given a finitely generated projective module P, if $\mathbb{H}[P]$ denotes the associated hyperbolic space of P, then the (graded) algebras $\mathrm{Cl}(\mathbb{H}[P])$ and $\mathrm{End}(\bigwedge(P))$ are isomorphic. We investigate the conditions under which a counterpart of this result holds in the sheaf-theoretic context. Next, we introduce standard involutions for $\mathcal{O}_X$-algebras associated with K-algebras, where K is a unital commutative ring with no zero divisors for the purpose of defining graded quadratic extensions of the ringed space $(X, \mathcal{O}_X)$, where $X = \mathrm{Spec}(K)$.