

Schemes of representations of finite rings

Let Λ be a not necessarily commutative finite ring and U a finite abelian group, both of p -power order for some prime p . We show how the Λ -module structures on U can be viewed in a natural way as the rational points of an affine algebraic scheme over the field \mathbf{F}_p . The construction rests on the classical formalisms of Witt vectors and of Greenberg modules.