Local duality for representations of finite group schemes. Injective modules at closed points.

Summary: A duality theorem for the stable module category of representations of a finite group scheme is proved. One of its consequences is an analogue of Serre duality, and the existence of Auslander-Reiten triangles for the $p$-local and $p$-torsion subcategories of the stable category, for each homogeneous prime ideal $p$ in the cohomology ring of the group scheme.

MSC:
- 16G10 Representations of associative Artinian rings
- 14L15 Group schemes
- 18G80 Derived categories, triangulated categories
- 20C20 Modular representations and characters
- 20G10 Cohomology theory for linear algebraic groups
- 20J06 Cohomology of groups

Keywords:
Serre duality; local duality; finite group scheme; stable module category; Auslander-Reiten triangle

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References: