Group actions on rings and the Cech complex

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We have previously shown that, when a finite group G acts on a polynomial ring S over a finite field k, only a finite number of isomorphism classes of indecomposable kG-modules occur as summands of S. We have also shown that the regularity of the invariant subring S^G is at most 0, which has various consequences, for example that S^G is generated in degrees at most n(|G|-1) (provided $n, |G| \ge 2$). Both of these results depend on the Structure Theorem of Karagueuzian and myself, which is proved by means of a long and complicated calculation. The aim of this talk is to sketch a proof that uses a more conceptual method.