

On A -generators for the cohomology of the symmetric and the alternating groups

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Abstract: Following Quillen's programme, one can read off a lot of information on the cohomology of a finite group G by studying the restriction homomorphism from this cohomology to the cohomology of all maximal elementary abelian subgroups of G . This leads to a natural question on how much information on A -generators of $H^*(G)$ one can read off from using the restriction homomorphism, where A denotes the Steenrod algebra. In this paper, we show that the restriction homomorphism gives, in some sense, very little information on A -generators of $H^*(G)$ at least in the important three cases, where G is either the symmetric group, the alternating group, or a certain type of iterated wreath products. © 2005 Cambridge Philosophical Society.

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References:

- Curtis, E.B., The Dyer-Lashof algebra and the Λ -algebra (1975) *Illinois J. Math.*, 18, pp. 231-246
- Hung, N.H.V., Spherical classes and the algebraic transfer (1997) *Trans. Amer. Math. Soc.*, 349, pp. 3893-3910
- Hung, N.H.V., The weak conjecture on spherical classes (1999) *Math. Zeit.*, 231, pp. 727-743
- Hung, N.H.V., Spherical classes and the lambda algebra (2001) *Trans. Amer. Math. Soc.*, 353, pp. 4447-11460
- Hung, N.H.V., On triviality of Dickson invariants in the homology of the Steenrod algebra (2003) *Math. Proc. Camb. Phil. Soc.*, 134, pp. 103-113
- Hung, N.H.V., Nam, T.N., The hit problem for the Dickson algebra (2001) *Trans. Amer. Math. Soc.*, 353, pp. 5029-5040
- Hung, N.H.V., Nam, T.N., The hit problem for the modular invariants of linear groups (2001) *J. Algebra*, 246, pp. 367-384

- Hung, N.H.V., Peterson, F.P., Generators for the Dickson algebra (1995) *Trans. Amer. Math. Soc.*, 347, pp. 4687-4728
- Hung, N.H.V., Peterson, F.P., Spherical classes and the Dickson algebra (1998) *Math. Proc. Camb. Phil. Soc.*, 124, pp. 253-264
- Mui, H., Modular invariant theory and cohomology algebras of symmetric groups (1975) *J. Fac. Sci. Univ. Tokyo*, 22, pp. 310-369
- Mui, H., Cohomology operations derived from modular invariants (1986) *Math. Zeit.*, 193, pp. 151-163
- Quang, H.M., (2003) Classification of Maximal Elementary Abelian 2-subgroups of the Alternating Groups, , BS Thesis, Vietnam National University 29 pages (in Vietnamese)
- Quillen, D., The spectrum of an equivariant cohomology ring I, II (1971) *Ann. of Math.*, 94, pp. 449-602
- Snaith, V., Tornehave, J., On $\pi S^*(BO)$ and the Arf invariant of framed manifolds (1982) *Amer. Math. Soc. Contemp. Math.*, 12, pp. 299-313