

The squaring operation on A-generators of the Dickson algebra.

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Abstract: We study the squaring operation Sq^0 on the dual of the minimal A-generators of the Dickson algebra. We show that this squaring operation is isomorphic on its image. We also give vanishing results for this operation in some cases. As a consequence, we prove that the Lannes-Zarati homomorphism vanishes (1) on every element in any finite Sq^0 -family in $Ext^*_A(\mathbb{F}_2, \mathbb{F}_2)$ except possibly the family initial element, and (2) on almost all known elements in the Ext group. This verifies a part of the algebraic version of the classical conjecture on spherical classes. © 2009 Cambridge Philosophical Society.

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