The hit problem for the dickson algebra

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Abstract: Let the mod 2 Steenrod algebra, .4, and the general linear group, GL(fc,F2), act on $P_k := F_2[x_1,...,x_k]$ with $|x_1| = 1$ in the usual manner. We prove the conjecture of the first-named author in Spherical classes and the algebraic transfer, (Trans. Amer. Math Soc. 349 (1997), 3893-3910) stating that every element of positive degree in the Dickson algebra $D_k := (P_k)^{GL(k'F2)}$ is A-decomposable in Pfc for arbitrary k > 2. This conjecture was shown to be equivalent to a weak algebraic version of the classical conjecture on spherical classes, which states that the only spherical classes in Q_0S^0 are the elements of Hopf invariant one and those of Kervaire invariant one. ??2001 American Mathematical Society.

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