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Arsen Elkin* (elkin@math.colostate.edu), Mathematics Department, 101 Weber Building, Colorado State University, Fort Collins, CO 80523, and **Yuri Zarhin**. *On endomorphism algebras of hyperelliptic jacobians.*

We discuss determination of endomorphism algebras of abelian varieties of dimension $(q - 1)/2$ for a prime power $q \equiv \pm 3 \pmod{8}$ in which the image of the Galois representation on 2-torsion is isomorphic to $PSL(2, q)$. This representation is simple, but not absolutely so, over \mathbb{F}_2 . In zero characteristic, it can be shown that such an abelian variety is either absolutely simple, or is isogenous to a self-product of elliptic curves admitting multiplication by $\mathbb{Q}(\sqrt{-q})$. In the former case, its algebra of endomorphisms is either \mathbb{Q} or a quadratic field. We also address the positive characteristic in the case when $q = 5$. Examples are drawn from hyperelliptic jacobians. (Received February 25, 2007)