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John Massman* (massman@rose-hulman.edu), Rose-Hulman Institute of Technology, 5500
Wabash Ave CM 4043, Terre Haute, IN 47803. *4-Dimensional Non-Associative Division Algebras.*

The classification of n -dimensional non-associative division algebras over a finite field \mathbb{F}_q is a classic problem, whose interest has been rekindled by its application to coding for cell phone transmissions. The classification is known for only a limited number of cases. The most general known result is when n is prime and q is sufficiently large. We extend the classification to the case when $n = 4$ and q is sufficiently large. (Received September 15, 2008)