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Cailan Chun Chun Li and **Man Cheung Kevin Tsui*** (mantsui@live.com), 9810 Taos Peak Way, Bakersfield, CA 93311. *On the images of multilinear maps of matrices over finite-dimensional division algebras.*

Let R be a central simple algebra finite-dimensional over its center \mathbb{F} of characteristic 0. We will show that every element of reduced trace 0 in R can be expressed as $[a, [c, b]] + \lambda[c, [a, b]]$ for some $a, b, c \in R$ where $\lambda \neq 0, -1$. In addition, let \mathcal{D} be a division algebra satisfying the conditions above. We will also show that the set of values of any nonzero multilinear polynomial of degree at most three, with coefficients from the center \mathbb{F} of \mathcal{D} , evaluated on $M_k(\mathcal{D}), k \geq 2$, contains all matrices of reduced trace 0. (Received September 22, 2015)