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Zinovy Reichstein (reichst@math.ubc.ca), University of British Columbia, and Nikolaus Vonessen* (nikolaus.vonessen@umontana.edu), University of Montana. The action of the general linear group on the universal division algebra. Preliminary report.

Let k be an algebraically closed base field of characteristic zero, and let m and n be integers ≥ 2 . Denote by UD(m, n) the universal division algebra generated by m generic $n \times n$ matrices. We study the natural action of the general linear group GL_m on UD(m, n). In particular, we prove that the fixed algebra for this action is a division algebra of the same degree as UD(m, n), namely n, provided $n \geq 3$ and $m \leq n^2 - 2$. (Received February 17, 2005)