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Fusun Akman* (akmanf@ilstu.edu) and **Papa Amar Sissokho** (psissok@ilstu.edu). *The lattice of finite vector space partitions and its Möbius function.* Preliminary report.

Let $V = V(n, q)$ be the vector space of dimension n over $GF(q)$. A vector space partition of V is a collection of subspaces of V such that every nonzero vector in V is contained in exactly one subspace belonging to this collection. We show that the set of all vector space partitions of V form a poset under refinement, with unique minimum and maximum elements, and introduce a lattice structure on it. Furthermore, we conjecture that the value of the Möbius function of this lattice approaches that of the lattice of set partitions of $\{1, 2, \dots, n\}$, and that the number of vector space partitions of $V(n, q)$ approaches the number of set partitions of $\{1, 2, \dots, n\}$, as $q \rightarrow 1$. We also compute the Möbius function of the partitions of $V(n, q)$ for small values of n . (Received February 04, 2010)