

## SPACES OF CONSTANT RANK MATRICES OVER $GF(2)^*$

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**Abstract.** For each  $n$ , we consider whether there exists an  $(n + 1)$ -dimensional space of  $n$  by  $n$  matrices over  $GF(2)$  in which each nonzero matrix has rank  $n - 1$ . Examples are given for  $n = 3, 4$ , and 5, together with evidence for the conjecture that none exist for  $n > 8$ .

**Key words.** Constant rank, Matrices, Heuristics.

**AMS subject classifications.** 15A03, 15-04.

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