

Zbl 655.05018

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*Has every Latin square of order  $n$  a partial Latin transversal of size  $n - 1$ ? (In English)*

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The authors have two conjectures:

Conjecture 1: An equi- $n$ -square has a transversal with at least  $n - 1$  distinct symbols. [For definition of equi- $n$ -square, see *S. Stein*, Transversals of Latin squares and their generalizations, *Pac. J. Math.* 59, 567-575 (1975; Zbl 302.05015)].

Conjecture 2: An  $n - 1$  by  $n$  array in which each symbol appears at most  $q$  times ( $q \leq n$ ) has a Latin transversal.

The authors' definition of a Latin transversal is the same as the usual definition of a transversal, (see e.g. the reviewer's joint book with *A. D. Keedwell* [Latin squares (1974; Zbl 283.05014)]).

{Reviewer's remarks:

1.) *I. I. Derienko* published a paper [Mat. Issled. 102, 53-65 (1988)] in which he proved a weaker version of Conjecture 1. Namely that every Latin square has a transversal with at least  $n - 1$  distinct symbols.

The reviewer was not able to understand Derienko's proof. At present some outstanding mathematicians of the field are checking Derienko's proof.

2.) There is a comment by the Editor which is not quite accurate. The Editor claims that the reviewer made a conjecture equivalent to Conjecture 1 [see Research Problem 40. *Period. Math. Hung.* 17, 245-246 (1986; Zbl 609.05018)], the purpose of the reviewer's paper was: knowing Stein's original conjecture to make a more general conjecture whose validity implies Conjecture 1.}

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Classification:

05B15 Orthogonal arrays, etc.

00A07 Problem books

Keywords:

Latin transversal