

Rainbow 1-factors in  $r$ -uniform complete multipartite hypergraphs  
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Brualdi's Conjecture that any latin square of order  $n$  has a partial transversal of size at least  $n-1$  can be restated as saying that any proper edge-coloring of  $K_{n,n}$  contains a rainbow matching (each edge a different color) with cardinality at least  $n-1$ .

Answering a question of Rosa, Woolbright & Fu proved the existence of a rainbow 1-factor in any properly colored complete graph of order  $2n > 4$ ; El-Zanati et al extended this result to uniform complete hypergraphs. We show the existence of a rainbow 1-factor in any properly edge-colored  $r$ -uniform complete multipartite hypergraph on  $r$  parts,  $n$  vertices per part, with  $r, n > 2$ .