Saad I. El-Zanati* (Saad@ilstu.edu), Michael J. plantholt, Papa A. Sissokho and Lawrence Spence. On the existence of a rainbow 1-factor in 1-factorizations of $K_{rn}^{(r)}$.

Let F be a 1-factorization of the complete uniform hypergraph $G = K_{rn}^{(r)}$ with $r \ge 2$ and $n \ge 3$. We show that there exists a 1-factor of G whose edges belong to n different 1-factors in F. Such a 1-factor is called a rainbow 1-factor or an orthogonal 1-factor. (Received September 20, 2007)