1077-05-1369 **Amin Bahmanian***, 221 Parker Hall Department of Mathematics, Auburn, AL 36849.

Generalizations of Baranyai's Theorem and Embedding Factorizations.

Let $K_n^h = (V, \binom{V}{h})$ be a complete h-uniform hypergraph on vertex set V with $|V| = n$. Baranyai showed that K_n^h can be expressed as the union of edge-disjoint r-regular factors if and only if h divides rn and r divides $\binom{n-1}{h-1}$. Here we present several generalizations of this result, and solve some related embedding problems. (Received September 19, 2011)