

Meeting: 999, Nashville, Tennessee, SS 14A, Special Session on Graph Theory and Matroid Theory

999-05-126 **Guantao Chen** and **Richard H. Schelp*** (rschelp@memphis.edu), Department of Math.
Sciences, University of Memphis, Memphis, TN 38152. *An Old Decomposition*
Problem. Preliminary report.

The following problem (not well known) has been around for more than 10 years. Let H be an arbitrary k – *regular* spanning subgraph of the balanced complete bipartite graph G with parts of order $4k$. Show that the edges of G can be partitioned into four cycles such that each four cycle contains exactly one edge of H . We show the partition is possible under an additional condition. We also prove a related result. (Received August 18, 2004)