

1014-05-1184

**Richard H Hammack\*** ([rhammack@rmc.edu](mailto:rhammack@rmc.edu)), Randolph-Macon College, P.O. Box 5005,  
Ashland, VA 23005. *Isomorphic components of tensor products of bipartite graphs.*

A standard result states that the tensor product of two connected bipartite graphs has exactly two components. These components may or may not be isomorphic, and no one knows exact conditions that determine this. Jha, Klavžar and Zmazek prove that if one of the factors admits an automorphism that interchanges its partite sets, then the product has isomorphic components. They conjecture that the converse holds. I prove the converse holds, provided the factors are square-free. Moreover, I present a matrix-theoretic conjecture that — if proved — would prove the converse in general; if refuted it would produce a counterexample. (Received September 27, 2005)