1057-94-219 **Wittawat Kositwattanarerk*** (wkositw@clemson.edu), Department of Mathematical Sciences, Clemson University, Clemson, SC 29634-0975, and **Gretchen L. Matthews** (gmatthe@clemson.edu), Department of Mathematical Sciences, Clemson University, Clemson, SC 29634-0975. *Pseudocodewords and Tanner graph representation.*

The performance of message-passing iterative decoding and linear programming (LP) decoding depends on the Tanner graph representation of the code. If the underlying graph contains cycles, then the algorithm could produce a non-codeword output called a pseudocodeword. We study the structure of pseudocodewords and present a sufficient condition for a code from a certain class to be pseudocodeword-free even if its Tanner graph contains a cycle. (Received January 26, 2010)