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Curtis G Nelson* (cnelso42@uwyo.edu), Department of Mathematics, Ross Hall, Room 205, 1000 E University Ave. Dept. 3036, Laramie, WY 82071, and **Bryan L. Shader**. *Maximal Parter-sets of Matrices Whose Graph is a Tree.*

Given a graph G on n vertices, we define $S(G)$ to be the set of all real symmetric $n \times n$ matrices whose zero-nonzero pattern is given by the edges of G . Let A be a matrix in $S(T)$ for some tree T . Let $A(i)$ be the submatrix of A obtained by deleting the i^{th} row and column of A . Let λ be an eigenvalue of A . It is possible for the multiplicity of λ as an eigenvalue of $A(i)$ to be greater than the multiplicity of λ as an eigenvalue of A . When this occurs, vertex i is called a Parter-vertex. A Parter-set is a set of Parter-vertices with the property that the multiplicity of λ continues to increase with each consecutive deletion of a row and column corresponding to a Parter-vertex in the set. This talk will present a result that identifies maximal Parter-sets for matrices whose graph is a tree. (Received August 18, 2014)