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**Joann Martinez Coronado\*** (coronado\_joann@yahoo.com). *Estimating the Dominant Eigenvector of Positive Matrices.*

Computing the eigenvectors of matrices is a useful tool in many areas of mathematics including problems involving dynamic systems. Computing eigenvectors, however, can be a slow and complicated process. For the power method, for example, given a starting vector, (such as the vector of all ones) a number of iterations must be performed before obtaining an acceptable answer for the dominant eigenvector. We would like to find a method to estimate the position of the eigenvector in a way that will decrease the number of iterations needed to reach an acceptable eigenvector. This would make the process of computing the dominant eigenvector faster and more accurate. In this study, we focus on Perron—Frobenius matrices (particularly in positive matrices) to determine what kind of relationship exists between the position of the eigenvector and the lengths of the columns of a positive matrix. We also want to explore what connection exists between the position of the eigenvector and the angles between the columns of the matrix. By creating codes in MATLAB that model these relationships, we have obtained numerical evidence that supports the existence of both of these relationships for this class of matrices. Further research will be done to quantify these relationships. (Received September 15, 2014)