1135-05-2575 **K Stasikelis*** (stasike@g.clemson.edu), Department of Mathematical Sciences, O-110 Martin Hall, Clemson, SC 29634, and **S Poznanovic**. *On reordering books and self-organizing libraries.*

The Tsetlin library is a model for the way an arrangement of books on a library shelf evolves over time. It assumes that, given n books, one book is read and returned at the end of the shelf before another one is picked up. Suppose the probability that a book i is picked up is x_i. An interesting property of this Markov chain is that its eigenvalues can be computed exactly and they are linear in the x_is. This result has been extended by Brown and Diaconis (1998) and Bidigare, Hanlon, and Rockmore (1999) to random-to-back pop shuffles, where a subset of books can be picked up and placed at the end of the shelf in their respective order before another subset is picked up. It has been extended to hierarchies of libraries with a tree structure by Björner (2008, 2009). In this work, we describe the eigenvalues of the transition matrix of a similar Markov chain in the case when the possible orderings of the books on the shelves are restricted to linear extensions of forests. (Received September 26, 2017)