

1117-05-517

Joshua Cooper*, 1523 Greene St., Columbia, SC 29208, and **Jeffrey Davis**. *Successful Pressing Sequences for a Bicolored Graph and Binary Matrices*.

We apply matrix theory over $\text{GF}(2)$ to understand the nature of so-called “successful pressing sequences” of black-and-white vertex-colored graphs. These sequences arise in computational phylogenetics, where, by a celebrated result of Hannenhalli and Pevzner, the space of sortings-by-reversal of a signed permutation can be described by pressing sequences. In particular, we offer several alternative linear-algebraic and graph-theoretic characterizations of successful pressing sequences, describe the relation between such sequences, and provide bounds on the number of them. We also offer several open problems that arose as a result of the present work. (Received January 19, 2016)