1154-15-381 **Steve Kirkland*** (`stephen.kirkland@umanitoba.ca`), Department of Mathematics, University of Manitoba, Winnipeg, MB R3T 2N2, Canada. *Directed Forests and the Constancy of Kemeny's Constant.* Preliminary report.

Consider a discrete–time, time–homogeneous Markov chain on states $1, \ldots, n$ whose transition matrix is irreducible. Denote the mean first passage times by $m_{jk}, j, k = 1, \ldots, n$, and stationary distribution vector entries by $w_k, k = 1, \ldots, n$. A surprising result of Kemeny reveals that the quantity $\sum_{k=1}^{n} m_{jk} w_k$, which is the expected number of steps needed to arrive at a randomly chosen destination state starting from state j, is independent of the initial state j. In this talk, we consider $\sum_{k=1}^{n} m_{jk} w_k$ from the perspective of algebraic combinatorics, and provide an intuitive explanation for its independence on the initial state j. The all minors matrix tree theorem is the key tool employed. (Received September 02, 2019)