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Jane Ivy Coons* (jicoons@ncsu.edu), 2311 Stinson Drive, SAS Hall - Office 4123, Raleigh, NC 27606, and **Seth Sullivan**. *The Cavender-Farris-Neyman Model with a Molecular Clock*.

We prove results about the polytope associated to the toric ideal of invariants of the Cavender-Farris-Neyman model with a molecular clock on a rooted phylogenetic tree. For instance, the number of vertices of this polytope is a Fibonacci number and the facets of the polytope can be described using the combinatorial structure of the underlying rooted tree. The toric ideal of invariants of this model has a quadratic Gröbner basis, and we use this Gröbner basis in special cases to give a unimodular triangulation of the associated polytope with number of simplices equal to an Euler zig-zag number. Finally, we show that the Ehrhart polynomial of these polytopes depends only on the number of leaves of the underlying tree, and not on the topology of the tree itself. (Received January 11, 2018)