

Emily Evans and Russell Jay Hendel
An Infinite 2-Dimensional Array Associated With Electric Circuits,
Fibonacci Quart. **60** (2022), no. 5, 151–171.

Abstract

Except for Koshy who devotes seven pages to applications of Fibonacci Numbers to electric circuits, most books and the Fibonacci Quarterly have been relatively silent on applications of graphs and electric circuits to Fibonacci numbers. This paper continues a recent trend of papers studying the interplay of graphs, circuits, and Fibonacci numbers by presenting and studying the Circuit Array, an infinite 2-dimensional array whose entries are electric resistances labeling edge values of circuits associated with a family of graphs. The Circuit Array has several features distinguishing it from other more familiar arrays such as the Binomial Array and Wythoff Array. For example, it can be proven modulo a strongly supported conjecture that the numerators of its left-most diagonal do not satisfy any linear, homogeneous, recursion, with constant coefficients (LHRCC). However, we conjecture with supporting numerical evidence an asymptotic formula involving π satisfied by the left-most diagonal of the Circuit Array.