

1106-15-2833

**Amy Streifel\*** (amystreifel@gmail.com). *Skew Characteristic Polynomials of Cacti.*

In traditional adjacency matrices of graphs, if there is an edge between the  $i$ th and  $j$ th vertices of the graph, then the matrix has 1s in the  $(i, j)$  and  $(j, i)$  positions. In my research I switch things up by asking what happens if you make one of those entries a  $-1$  instead. These are called skew-adjacency matrices. With  $2^m$  possible skew-adjacency matrices for a graph with  $m$  edges, does this lead to an equal explosion on the number of skew characteristic polynomials? When does a graph have only one skew characteristic polynomial? Can we make graphs to get any number of possible skew characteristic polynomials we want? And how exactly does one calculate a characteristic polynomial without looking at a matrix at all? (Received September 16, 2014)