1116-05-399 **Peter E. Dillery*** (ped7pc@virginia.edu), 700 Evergreen Avenue, Charlottesville, VA 22902, **Emily E. Cormier** (ecormier@bowdoin.edu), p.o. box 412, Deer Isle, ME 04627, and **John H. Whelan** (jowhelan@vassar.edu), 185 Hunter Avenue, North Babylon, NY 11703. *Minimal Length Maximal Green Sequences for Type $\mathbb{A}$ Quivers.*

The study of maximal green sequences (MGS) is motivated by string theory, in particular Donaldson-Thomas invariants and the BPS spectrum. This concept can also be examined through the framework of τ-tilting modules in representation theory. It is known that triangulations of disks with no punctures yield type $\mathbb{A}$ quivers. B.Keller introduced green mutations and the corresponding MGS's. These sequences can be studied both through the combinatorial transformations of directed graphs as well as through triangulations of disks.

Our research focuses on maximal green sequences of minimal length for quivers mutation equivalent to type $\mathbb{A}$ quivers. It is known that each acyclic quiver has at least one minimal length MGS of length n, where n is the number of vertices in the quiver. First, we define an algorithm that produces such a sequence of mutations for any given acyclic type $\mathbb{A}$ quiver. For cyclic type $\mathbb{A}$ quivers, we define an algorithm that produces an MGS of length $n + t$ where n is the number of vertices and t is the number of 3-cycles in a quiver. We then proceed to show that $n + t$ is always the minimal length of MGS's corresponding to any type $\mathbb{A}$ quiver. (Received August 30, 2015)