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**Vidur Malik\*** ([vmalik@andromeda.rutgers.edu](mailto:vmalik@andromeda.rutgers.edu)), Dept. of Mathematics and Computer Science, Room 216, Smith Hall, 101 Warren Street, Newark, NJ 07102. *Curves generated on surfaces by the G-M algorithm.*

The Gilman-Maskit algorithm determines whether or not two elements of  $\mathrm{PSL}(2, \mathbb{R})$  generate a non-elementary discrete group. Gilman-Keen reinterpreted the algorithm as an unwinding and winding of curves about each other when the group was discrete, but did not contain any elliptic or parabolic elements. They related the complexity of the algorithm to the complexity of certain curves. Here we examine the behavior of the winding and unwinding of the curves in the general case, including the orbifold case. We show that elliptic generators create curves that are self-wound and modify the Gilman-Keen formulas to account for these self-windings. (Received September 25, 2006)