

962-20-988

Moira Chas (Moirachas@aol.com), Mathematics Department, CUNY Graduate Center, NY, NY 10036, and **Jane Gilman*** (gilman@andromeda.rutgers.edu), Mathematics Department, Rutgers University, Newark, NJ 07102. *An algorithm for symplectic matrices of finite order surface mapping-classes*. Preliminary report.

Assume that h is a conformal automorphism of a compact Riemann surface S of genus $g \geq 2$. Equivalently h can be thought of as a representative of a finite order mapping-class. If h is of prime order p with t fixed points, then h is determined up to conjugacy by a $(p - 1)$ -tuple of integers (n_1, \dots, n_{p-1}) where $t = \sum_{i=1}^{p-1} n_i$ and $\sum_{i=1}^{p-1} i * n_i \equiv 0(p)$. We present an algorithm whose input is the $(p - 1)$ -tuple of integers and whose output is the symplectic matrix of the action of h on a maximally adapted canonical homology basis. Previous results gave a non-symplectic matrix representation for h on an adapted basis together with the intersection matrix. We discuss settings in which the algorithm can be implemented. (Received September 30, 2000)