1096-14-2342 **James S. Wolper***, wolpjame@isu.edu. *Information Theory and Moduli of Riemann Surfaces.* Preliminary report.

One interpretation of Torelli's Theorem, which asserts that a compact Riemann Surface X of genus $g > 1$ is determined by the $g(g+1)/2$ entries of the period matrix, is that the period matrix is a message about X. Since this message depends on only $3g - 3$ moduli, it is sparse, or at least approximately so, in the sense of information theory. Thus, methods from information theory may be useful in reconstructing the period matrix, and hence the Riemann surface, from a small subset of the periods. The results here show that, with high probability, any set of $3g - 3$ periods form moduli for the surface. (Received September 17, 2013)