Danny Calegari and Joel Louwsma* (jlouwsma@ou.edu), Department of Mathematics, The University of Oklahoma, Norman, OK 73019. Immerged surfaces in the modular orbifold.

A hyperbolic conjugacy class in the modular group $\text{PSL}(2, \mathbb{Z})$ corresponds to a closed geodesic in the modular orbifold. Some of these geodesics virtually bound immersed surfaces, and some do not; the distinction is related to the polyhedral structure in the unit ball of the stable commutator length norm. We prove the following stability theorem: for every hyperbolic element of the modular group, the product of this element with a sufficiently large power of a parabolic element is represented by a geodesic that virtually bounds an immersed surface. (Received August 19, 2011)