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**Franco Rota\*** (rota@math.rutgers.edu), Department of Mathematics - Hill Center, 110 Frelinghuysen Road, Piscataway, NJ 08854-8019. *The stability manifold of local orbifold elliptic quotients.*

In this paper, we investigate the stability manifold of local surface models of orbifold quotients of elliptic curves. In particular, we describe a component of the stability manifold which maps as a covering space onto the universal unfolding space of the mirror singularity. The construction requires a detailed description of the derived McKay correspondence for  $A_N$  surface singularities and a study of wall-crossing phenomena. The results presented are an analog of the work of Bridgeland and Thomas on Kleinian singularities in the context of simple elliptic singularities. At the same time, they extend Ikeda's result on arbitrary root systems of symmetric Kac-Moody Lie algebras to the case of elliptic root systems. Moreover, they represent an instance of a mirror symmetric principle. (Received September 15, 2019)