1089-14-219 **Andrea Brini**, **Renzo Cavalieri** and **Dustin Ross*** (ross@math.colostate.edu), 233 Weber Building, Colorado State University, Fort Collins, CO 80523. *The Open String McKay Correspondence for Type A Singularities.*

A longstanding conjecture of Ruan states that the Gromov-Witten (GW) theory of a Gorenstein orbifold should be equivalent to the GW theory of a crepant resolution of the coarse space. In 2008, Coates-Corti-Iritani-Tseng proved Ruan's crepant resolution conjecture (CRC) for A_n singularities by equating the big quantum cohomologies. We extend this correspondence to open GW invariants of the orbi-threefold $[\mathbb{C} \times A_n]$ and its resolution.

In particular, following a proposal of Iritani, we first show that the quantum D-modules associated to the orbifold and its resolution are local neighborhoods in a global quantum D-module. Unique to our methods is the fact that our global quantum D-module is defined completely in terms of A-model coordinates. By analytically continuing flat sections, we give an explicit isomorphism of the local quantum D-modules associated to the spaces and we show that this arises from a natural identification of K-groups, thereby verifying a conjecture of Iritani. The explicit computation of the isomorphism allows us to state and prove an open CRC where we interpret the open GW invariants as sections of Givental space and show that these sections are identified after an appropriate linear transformation. (Received February 15, 2013)