1054-57-159   **Francis Bonahon*** (`fbonahon@math.usc.edu`), Department of Mathematics, University of Southern California, Los Angeles, CA 90089-2532, and **Helen Wong**, Department of Mathematics, Carleton College, Northfield, MN 55057. *Skein relations and quantizations of representations of surfaces groups.* Preliminary report.

The space of representations of surface groups into the matrix group $SL_2(\mathbb{C})$ occurs in many different contexts and can be seen in several ways. The algebraic geometry point of view sees this space as an algebraic variety, whose coordinate ring is generated by trace functions. The topologists and hyperbolic geometers tend to prefer explicit coordinates, such as shear coordinates or cusp length coordinates.

Quantizations of this representation space have been introduced in the past 15 years, using the Kauffman skein algebra (Przytycki-Sikora, Turaev) for the algebraic geometry framework, and quantum Teichmüller theory for the coordinate-based approach (Chekhov-Fock, Kashaev). Each point of view has its own advantages, and its own deficiencies. It was conjectured that these two quantizations were essentially equivalent, but a proof has remained elusive.

We establish a bridge between the two points of view. (Received September 13, 2009)