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**Title: Skein trace from curve counting**

**Abstract:** Given a 3-manifold  $M$  and a branched cover arising from the projection of a Lagrangian 3-manifold  $L$  in the cotangent bundle of  $M$ , we define a map from the HOMFLYPT skein module of  $M$  to that of  $L$ . The definition is by counting holomorphic curves, but the theory of Morse flow graphs gives a more combinatorial prescription, which we make completely explicit in the case of branched double covers. After specializing to the case where  $M$  is a surface times an interval, and additionally specializing the HOMFLYPT skein to the  $\mathfrak{gl}(2)$  skein on  $M$  and the  $\mathfrak{gl}(1)$  skein on  $L$ , we recover the existing prescription of Neitzke and Yan, and the resulting map is a close cousin of the quantum trace map of Bonahon and Wong. When  $M$  is a surface times an interval, we also show that changing the branched double cover by disk surgery changes the map by skein-valued cluster transformation. This is a joint work in progress with T. Ekhholm, P. Longhi, and V. Shende.