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Title: Canonical local to global extensions of 2d topological field theories.

Abstract: An E_1 Calabi-Yau object A in a symmetric monoidal infinity-category C is a dualizable E_1 algebra together with an S^1 -cyclic trace that exhibits a self duality of A . Examples include the cochain complex of any closed oriented manifold. By work of Barkan and Steinebrunner, every E_1 Calabi-Yau object in C defines a 2-d open field theory with values in C , which are symmetric monoidal functors from the open bordism category on disks to C . In joint work with Barkan and Steinebrunner, we show that any open field theory F extends canonically to an open-closed field theory whose value at the circle is the THH of the E_1 Calabi-Yau object A associated to F . As a corollary, we obtain an action of the moduli spaces of surfaces on the THH of E_1 Calabi-Yau algebras. This provides a space level refinement of previous work of Costello (over $\mathbb{Q}$) and Wahl (over $\mathbb{Z}$).

Time permitting, I will discuss ongoing work with Andrea Bianchi on canonical local to global extensions of TFTs associated with E_∞ Calabi-Yau objects.