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String topology and the cyclic Deligne conjecture

I will describe a new approach to genus zero operations in string topology via noncommutative geometry. Specifically, I will explain the cyclic version of the Deligne conjecture which gives an action of the framed E_2 operad on the Hochschild cochains of a Calabi-Yau category. In the setting of relative Calabi-Yau structures, this gives a generalization of the string topology operations to manifolds with boundary. Moreover, this structure has a natural interpretation in terms of deformation theory which gives a vast generalization of Turaev's theorem relating the Lie algebra of loops on a Riemann surface to the Poisson algebra of functions on the character variety. This is joint work with Christopher Brav.