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Andre Henriques and **David Penneys*** (dpenneys@math.ucla.edu), UCLA Mathematics Department, Box 951555, Los Angeles, CA 90095, and **James Tener**. *Categorified trace for module tensor categories over braided tensor categories*.

We will discuss the categorified trace $\mathrm{Tr}_{\mathcal{C}}$ associated to a pivotal module tensor category \mathcal{M} over a braided pivotal tensor category \mathcal{C} . By work of Bezrukavnikov, Finkelberg and Ostrik, the trace comes with canonical natural isomorphisms $\mathrm{Tr}_{\mathcal{C}}(x \otimes y) \cong \mathrm{Tr}_{\mathcal{C}}(y \otimes x)$, which we call the traciators. This situation lends itself to a diagrammatic calculus of strings on cylinders, where the traciator corresponds to wrapping a string around the back of a cylinder. We show that $\mathrm{Tr}_{\mathcal{C}}$ has a much richer graphical calculus in which the tubes are allowed to branch and braid. (Received February 15, 2016)