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Ben Webster* (bwebster@math.mit.edu), MIT, Department of Mathematics, Room 2-306, 77 Massachusetts Avenue, Cambridge, MA 02139. *A categorification of quantum tangle invariants via quiver varieties*. Preliminary report.

We show how, building on the work of Zheng on categorification of tensor products of integrable representations of quantum groups, one can use the geometry of quiver varieties to construct a categorical lift of the R-matrix, ribbon element, evaluation and coevaluation between these categories. This allows for the construction of functor-valued invariants of tangles which descend to the usual Reshetikhin-Turaev invariants, and in particular knot invariants valued in bigraded vector spaces. (Received September 15, 2008)