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John Armstrong* (john.armstrong@math.yale.edu), 525 Whitney Avenue, New Haven, CT 06511. *The Extension of Knot Groups to Tangles*. Preliminary report.

The classical invariant $\Gamma(K)$ assigns to a knot or link in the 3-sphere the fundamental group of its complement. As part of a general program, we seek to extend this functor to tangles. That is, we describe a functor from the category of tangles to an appropriate target category so that when restricted to knots and links the only nontrivial data in the value of the functor is the knot group. The technique used immediately extends to related invariants such as the quandle of a tangle and the biquandle of a virtual tangle. Generalizations of the technique seem to give inroads into extending a wide variety of classical algebraic and combinatorial invariants of knots and links. (Received December 15, 2005)