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Kristine Pelatt*, 2004 Randolph Ave, Saint Paul, MN 55105. *Geometric homology classes in the space of knots.*

Using the calculus of functors, Sinha found spectral sequences converging to the homology and cohomology of knot spaces. These spectral sequences, however, do not immediately give representatives of cycles and cocycles. Generalizing methods of Cattaneo, Cotta-Ramusino, and Longoni, we develop a method of describing representatives of cycles in the space of knots by resolving intersection points on singular knots. The method of resolution is dictated by the combinatorics of the homology spectral sequence. In particular, we describe geometric representatives of non-trivial $3(d - 8)$ -dimensional cycles and cocycles, which guide our search for additional geometric representatives of cycles and cocycles. (Received July 31, 2014)