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Robin M. J. Koytcheff* (robink@math.brown.edu), Box 1917, 151 Thayer St., Providence, RI 02912. *A homotopy-theoretic view of Bott–Taubes integrals and knot spaces.*

Bott and Taubes considered a bundle over the space of knots whose fiber is a compactified configuration space, and they constructed knot invariants by performing integration along the fiber of this bundle. Their method was subsequently used to construct real cohomology classes in spaces of knots in \mathbb{R}^n , $n > 3$. Replacing integration of differential forms by a Pontrjagin-Thom construction, we have constructed cohomology classes with arbitrary coefficients. Motivated by work of Budney and F. Cohen on the homology of the space of long knots in \mathbb{R}^3 , we have proven a product formula for these classes with respect to connect-sum. We have also made some progress towards further understanding these classes using the cosimplicial model for knot spaces coming from the Goodwillie-Weiss embedding calculus. (Received September 22, 2011)