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Liviu I Nicolaescu* (lnicolae@nd.edu), Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. *A stochastic Gauss-Bonnet-Chern theorem.*

We investigate Gaussian ensembles of random sections of an oriented real vector bundle E over a compact oriented manifold M . We first show that this ensemble naturally defines a metric on E and a connection compatible with this metric. We next prove that the expectation of the random current defined by the zero locus of such a random section is equal, as a current, to the Euler form of E canonically determined by the above metric and connection. (Received January 05, 2017)