1046-81-931   **Gregory W. Moore*** (`gmoore@physics.rutgers.edu`). *Self-duality and generalized differential cohomology.*

The familiar relation of edge-state chiral bosons to Chern-Simons theories in three dimensions is generalized to the theory of self-dual fields quantized by a Pontryagin self-dual cohomology theory. We emphasize examples of some importance in string theory including the self-dual 3-form in six dimensions and the RR field of type II string theory. We apply this theory to the theory of RR fields in orientifolds of type II string theory. This will be based on work done over the past few years with D. Belov, J. Distler, D. Freed, and G. Segal. (Received September 12, 2008)