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Lev Kapitanski* (1.kapitanski@math.miami.edu), Department of Mathematics, University of Miami, 1365 Memorial Dr, Coral Gables, FL 33146. *The Pontrjagin-Hopf invariants in nonlinear sigma-models.*

In this talk I will describe the homotopy invariants for maps between a three-dimensional manifold and the two-sphere and consider several nonlinear sigma-models where those invariants are important. I will discuss the corresponding variational and dynamical problems. (Received August 28, 2009)