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Min-Max Theory for the Yang-Mills-Higgs Equations

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Abstract. In each monopole sector there exist an infinite number of finite energy solutions to the Prasad-Sommerfield limit of the SU(2) Yang-Mills-Higgs equations on $\mathbb{R}^3$ whose energy is greater than any finite number.

Contents

A.1. Introduction

The differential equations of a classical gauge theory are, in many cases, the formal variational equations of a functional (the action) on a topologically non-trivial space. And so it was conjectured [1, 2] that Morse theory, or some weaker analog might be useful for establishing the existence of non-trivial solutions. There are

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