Stability properties of solitons for a semilinear Skyrme equation

Abstract. In this talk we consider a generalization of energy super–critical wave maps which were introduced by Adkins and Nappi as an alternative to Skyrme wave maps. These are corotational maps from 1+3 dimensional Minksowski space into the 3–sphere which satisfy a certain semi–linear geometric wave equation. Each finite energy Adkins–Nappi wave map has a fixed topological degree n which is an integer. We will discuss recent joint work with Andrew Lawrie in which we prove that for each $n \in \mathbb{N} \cup \{0\}$ there exists a unique, nonlinearly stable Adkins–Nappi harmonic map Q_n (a stationary solution) with degree n. Moreover we have the following conditional large data result: any Adkins–Nappi wave map of degree n whose critical norm is bounded on its interval of existence must be global and scatter to Q_n as $t \to \pm\infty$.