

Contribution Title:	RECENT PROGRESS ON WAVE-MAPS
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In this talk I will discuss recent progress on the so called Wave-Maps which are perhaps the simplest non-linear hyperbolic gauge field equations. These include maps into the sphere \mathbb{S}^2 , also sometimes called “sigma-models” which arise in quantum-field theory and ferromagnetism, as well as maps into the hyperbolic plane \mathbb{H}^2 , which can be thought of as models for certain gravitational fields with $U(1)$ symmetry. Based on numerical experiments and analogies with the harmonic-map heat-flow, it has long been conjectured that such fields could become singular for positively curved targets, while for negative target curvature the Cauchy-problem should always be globally well posed. There has been striking progress recently on this set of conjectures, and I will try give some idea about the current state of affairs in my talk.

This is joint work with Pierre Raphael, Igor Rodnianski, and Daniel Tataru, and I will also discuss recent work of Joachim Krieger, Wilhelm Schlag, and Terry Tao, as well as earlier seminal contributions by Sergiu Klainerman, Matei Machedon, and others.