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Shabnam Beheshti* (s.beheshti@qmul.ac.uk), School of Mathematical Sciences, Queen Mary University of London, Mile End Road, London, E1 4NS, United Kingdom, and **Shadi Tahvildar-Zadeh** (shadi@math.rutgers.edu), Department of Mathematics, Rutgers University, 110 Frelinghuysen Road, Piscataway, NJ 08854. *Controlled Singular Harmonic Maps in General Relativity*. Preliminary report.

Integrability and dressing techniques have been extensively utilized in the construction and analysis of exact solutions to the Einstein vacuum and Einstein-Maxwell equations. In joint work with S. Tahvildar-Zadeh, this framework is generalized to include geometric field theories which can be cast as axially symmetric harmonic maps into a variety of symmetric spaces. Applying a control-theory perspective to the solution-generating mechanism gives rise to surprising new evidence for existence—and possible non-existence—of certain singular configurations for solutions to Einstein's Equations. Main ideas will be outlined as a first step in the study of more general integrable field theories. (Received September 23, 2014)