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**Mohandas Pillai\*** ([mkpillai@ucsd.edu](mailto:mkpillai@ucsd.edu)). *Global, Non-scattering solutions to the energy critical wave maps equation.*

We consider the 1-equivariant energy critical wave maps problem with two-sphere target. Using a method based on matched asymptotic expansions, we construct infinite time relaxation, blow-up, and intermediate types of solutions that have topological degree one. More precisely, for a symbol class of admissible, time-dependent length scales, we construct solutions which can be decomposed as a ground state harmonic map (soliton) re-scaled by an admissible length scale, plus radiation, and small corrections which vanish (in a suitable sense) as time approaches infinity. Our class of admissible length scales includes positive and negative powers of  $t$ , with exponents sufficiently small in absolute value. In addition, we obtain solutions with soliton length scale oscillating in either a bounded or unbounded set, for all sufficiently large  $t$ . (Received January 16, 2021)