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Existence and partial regularity results for the heat flow for harmonic maps. (English)

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Math. Z. 201, No. 1, 83-103 (1989).

For $M = \mathbb{R}^m$or compact m-dimensional manifolds M, $m > 2$, and compact n-dimensional target manifolds N we establish the existence of a global, partially regular solution to the evolution problem (1.6-7) for harmonic maps from M into N. The solution is smooth off a singular set of co-dimension ≥ 2 and as $t \to \infty$ converges to a partially regular harmonic map from M into N.

Reviewer: M.Struwe

MSC:

58E20 Harmonic maps, etc.
58J35 Heat and other parabolic equation methods for PDEs on manifolds

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solution to the evolution problem; harmonic maps; regular harmonic map; regularity for heat flows

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