

**Jost, Jürgen**

**The Dirichlet problem for harmonic maps from a surface with boundary onto a 2-sphere with nonconstant boundary values.** (English) [Zbl 0551.58012](#)

*J. Differ. Geom.* 19, 393-401 (1984).

Given a compact 2-dimensional Riemannian manifold  $\Sigma_1$  with  $\partial\Sigma_1 \neq \emptyset$  and a Riemannian manifold  $\Sigma_2$  which is topologically  $S^2$ , the author shows that the Dirichlet problem for harmonic maps of  $\Sigma_1$  to  $\Sigma_2$  can be solved for any nonconstant boundary values  $\partial\Sigma_1 \rightarrow \Sigma_2$  provided that there is no topological obstruction to the extension. He, in fact, constructs two such harmonic maps which are energy minimizing and shows, by an example, that the minimum of energy may not be attained in every homotopy class. The corresponding problem for trivial boundary values has been negatively solved by Lemaire.

Reviewer: G.Tóth

**MSC:**

[58E20](#) Harmonic maps, etc.

[58E15](#) Variational problems concerning extremal problems in several variables; Yang-Mills functionals

Cited in **2** Reviews  
Cited in **17** Documents

**Keywords:**

Dirichlet problem; harmonic maps

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