

Takahashi, Futoshi**Multiple solutions of H -systems on some multiply-connected domains.** (English)

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Summary: In this note we consider the following problem $-\Delta u = 2u_x \wedge u_y$ in Ω , $u = 0$ on $\partial\Omega$, where Ω is a bounded smooth domain in \mathbb{R}^2 , $u \in H_0^1(\Omega; \mathbb{R}^3)$ and “ \wedge ” denotes the usual vector product in \mathbb{R}^3 . We show that if the domain Ω is conformal equivalent to a $(K + 1)$ -ply connected domain satisfying some conditions, then the problem has at least K distinct nontrivial solutions.

MSC:[35J65](#) Nonlinear boundary value problems for linear elliptic equations[35J20](#) Variational methods for second-order elliptic equations[35J50](#) Variational methods for elliptic systems[35J60](#) Nonlinear elliptic equations[58E12](#) Variational problems concerning minimal surfaces (problems in two independent variables)

Cited in 1 Document

Keywords:Aleksandrov-Bakelman-Pucci-type maximum principle; comparison principle between L^p -subsolutions and L^p -strong supersolutions; viscosity solutions; Hölder regularity