

Fall, Mouhamed Moustapha; Mercuri, Carlo

Minimal disc-type surfaces embedded in a perturbed cylinder. (English) Zbl 1240.53004
Differ. Integral Equ. 22, No. 11-12, 1115-1124 (2009).

The paper deals with small perturbations of an infinite cylinder in three-dimensional Euclidian space. Minimal disc-type surfaces embedded in the cylinder and intersecting its boundary perpendicularly are found. The existence and localization of those minimal discs is a consequence of a non-degeneracy condition for the critical points of a functional related to the oscillations of the cylinder from the flat configuration.

Reviewer: [Josef Janyška \(Brno\)](#)

MSC:

- [53A10](#) Minimal surfaces in differential geometry, surfaces with prescribed mean curvature Cited in **3** Documents
- [53C21](#) Methods of global Riemannian geometry, including PDE methods; curvature restrictions
- [35R35](#) Free boundary problems for PDEs

Keywords:

[cylinder](#); [minimal disc](#)