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GROUND-STATE SOLUTIONS TO A KIRCHHOFF-TYPE TRANSMISSION PROBLEM

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Abstract. In this paper, we consider the existence of ground-state solutions to nonlinear Kirchhoff-type transmission problems by using the methods from (Silvia Cingolani and Tobias Weth, *On the planar Schrödinger–Poisson system*, Ann. Inst. H. Poincaré Anal. Non Linéaire **33** (2016), no. 1, 169–197). Here, we avoid the conditions under which the nonlinear terms of f and g are forms of C^1. In particular, when $N = 2$, the existence of ground-state solutions is established to the Kirchhoff-type transmission problem with exponent-type nonlinearity.

1. Introduction

Let Ω be a bounded domain in $\mathbb{R}^N (N \geq 2)$ with a $C^{1,1}$ boundary $\Gamma := \partial\Omega$, $\Omega_1 \subset \mathbb{R}^N$ be a subdomain of Ω with a $C^{1,1}$ boundary $\Sigma := \partial\Omega_1$ and $\overline{\Omega}_1 \subset \Omega$. Assume that $\Omega_2 = \Omega \setminus \overline{\Omega}_1$ is connected. Obviously, $\Gamma \cap \Sigma = \emptyset$ and $\partial\Omega_2 = \Gamma \cup \Sigma$. In this paper, we focus on the existence of ground-state solutions to the following

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