ICRAMCS 2026

THE EIGHTH EDITION OF THE INTERNATIONAL CONFERENCE ON RESEARCH IN APPLIED MATHEMATICS AND COMPUTER SCIENCE
April 23-24-25, 2026 | Marrakech, Morocco

Boundary value problems having natural growth terms and Hardy potential

Communication Info

Authors:
ABDELAAZIZ SBAI[1]

[1] Higher School of Technology of Meknès, Moulay Ismail University, Meknès, Morocco

Keywords:
(1)Hardy potentials
(2) Weak solutions
(3) Nonlinear elliptic

Abstract

We study the effect of regularization on the solutions, in the nonlinear Dirichlet problem, when we have the interaction between the coefficient $a(x)$, the datum $f(x)$, $H(x, u, \nabla u)$ and the presence of Hardy potentials in the right-hand side. Specifically, we establish the existence of solutions in W_0^{1,2}(Omega) and in L^{\infty}(\Omega) of the quasilinear boundary value problem having lower order terms with natural growth.

References

[1] Arcoya D,Boccardo L.Regularizing effect of the interplay between coefficients in some elliptic equations. J Funct Anal. 2015;268, 1153–1166.
[2] Sbai A, El Hadfi Y, El Ouardy M. Regularizing effect of lower order terms in non linear Dirichlet problems with singularity, Partial Differ Equations Appl. 2024,5, 34.
[3] Peral I, Soria F. Elliptic and parabolic equations involving the Hardy-Leray potential. Vol. 38, De Gruyter series in nonlinear analysis and applications. Berlin, Boston: Walter De Gruyter GmbH;2021.
[4] García Azorero JP, Peral Alonso I. Hardy inequalities and some critical elliptic and parabolic problems. J Differ Equations. 1998;144:441–476.
[5] Arcoya D, Boccardo L, Orsina L. Hardy potential versus lower order terms in Dirichlet problems: regularizing effects. Math Eng. 2021;5(1):1–14.