



ON A MIXED BOUNDARY VALUE PROBLEM ON BOUNDED DOMAINS OF \mathbb{R}^3

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Abstract: We are interested in a nonlinear Laplace equation with critical nonlinearity and mixed Dirichlet–Neumann boundary conditions on bounded domains of \mathbb{R}^3 . Building on the analysis of [1] and on further developments of the theory of critical points at infinity [6], we study the lack of compactness of the associated variational problem and prove general existence theorems.

2020 Mathematics Subject Classification: 35J20, 35J25, 35J60.

Key words: nonlinear elliptic problems, critical nonlinearity, Dirichlet–Neumann boundary conditions, variational calculus.