Boundary trace of positive solutions of supercritical semilinear elliptic equations in dihedral domains

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Abstract. We study the generalized boundary value problem for (E) \(-\Delta u + |u|^{q-1}u = 0\) in a dihedral domain \(\Omega\), when \(q > 1\) is supercritical. The value of the critical exponent can take only a finite number of values depending on the geometry of \(\Omega\). When \(\mu\) is a bounded Borel measure in a \(k\)-wedge, we give necessary and sufficient conditions in order it be the boundary value of a solution of (E). We also give conditions which ensure that a boundary compact subset is removable. These conditions are expressed in terms of Bessel capacities \(B_{s,q'}\) in \(\mathbb{R}^{N-k}\) where \(s\) depends on the characteristics of the wedge. This allows us to describe the boundary trace of a positive solution of (E).

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