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 Ω, when $q > 1$ is supercritical. The value of the critical exponent can take only a finite number of values depending on the geometry of Ω. When μ 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).