
The Dirichlet problem on bad domains using metrics and prime ends

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The Perron–Wiener–Brelot method is a powerful way of solving the Dirichlet problem in general domains. For every boundary data it provides an upper and a lower solution. In the case of the Laplace equation it is well known when these two solutions coincide and resolutive boundary data are characterized by means of the harmonic measure. For the nonlinear p -Laplace equation, the class of resolutive boundary data is not known, but there are some partial results, e.g. that continuous boundary data are resolutive. The invariance under perturbations on sets of capacity zero is also not fully understood in the nonlinear case. In the talk we shall see how some of these questions can be attacked by changing the metric in the domain and by considering new capacities.