

YMC2004 TALK ABSTRACT

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Title: Analyzing behavior of solutions of a nonlinear elliptic PDE

Description:

I will present some results on solutions of $\text{Laplacian}(u) = u^{-a}$, where $0 < a < 1$. I will define a "tornado sequence" of solutions and outline how to use fixed point theorems and the maximum principle to rule them out. I will generalize these results for the equation $\text{Laplacian}(u) = g(u)u^{-a}$, where g satisfies some weak conditions. This result implies continuity of limits of positive solutions for dimension 2.