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Department of Mathematics, Wayne State University, 656 W. Kirby, 1150 FAB, Detroit, MI 48202.
Radial Symmetry Of A Nonlinear Elliptic Differential Or Integral Equation Over A
Ring. Preliminary report.

In this talk, I will talk about a joint work with P. Wang on the symmetry of a solution of a differential or integro-equation of the form Lu = f(u) over a ring. Such a problem is known to not bear uniqueness, and even worse the radial monotonicity of a solution is absent. To my best knowledge, existing results, whether employing the moving plane method or not, treat only radially monotone solutions with restriction of the function f such as being increasing. We incorporated a new idea into the moving plane method so that the symmetry of a solution of a broader class of equations can be proved. Not only our result is new. The method we use is original and seems to work for more problems. I will just explain it for the Laplacian and its integro counterpart, the fractional Laplacian. (Received February 04, 2017)