1150-35-519 **Alaa Haj Ali*** (alaahajali1234@gmail.com) and **Peiyong Wang**. *Radial Symmetry for the p-Laplace Operator.*

We study the radial symmetry of a function u weak solution of a boundary value problem associated with the PDE: $-\Delta_p u + f(u) = 0$ over a perfect ring as well as over a perturbed ring. Here Δ_p is the p-Laplace operator and f is a non-positive continuous function. This work is an extension of our previous work in the case of the Laplace operator where we have written a generalized moving plane method argument which depends heavily on the Stong Maximum Principle and Hopf's lemma for the Laplace operator. However, due to the lack of sufficient regularity and the absence of the strong comparison principle for the p-Laplacian, we prove our results through approximation by a family of problems associated with the regularized p-Laplacian:

$$\Delta_{p,\epsilon} u = \operatorname{div}\left((\varepsilon + |\nabla u|^2)^{p/2-1}\nabla u\right)$$

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Due to the non-uniqueness of our problem, the main difficulty lies in the construction of an approximating sequence. This is a joint work with my advisor professor Peiyong Wang. (Received July 15, 2019)