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**Eun Kyoung Lee\*** (eunyoung165@gmail.com), **Seong-Uk Kim** and **Yong-Hoon Lee**. *Three solutions theorem for radial solution of  $p$ -Laplacian problem on Exterior domain.*

This is a joint work with Seong-Uk Kim and Yong-Hoon Lee. In this talk, we prove the three solutions theorem for  $p$ -Laplacian ordinary differential problem with singular weight function. This theorem can explain the three solutions theorem for corresponding radial solutions on exterior domain. To prove this theorem, we compute the Leray-Schauder Degree on new weighted solution space. This theorem can be applied to the combustion model to show the existence of three positive radial solutions on exterior domain. (Received September 24, 2012)