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**Lina Ma\*** (ma6@purdue.edu), 150 N. University Street, West Lafayette, IN 47906. *3D Maxwell equations on Exterior Problem.*

We study the time-harmonic Maxwell equations on exterior problem, using transferred field expansion which turns the problem with exterior of a regular sphere. We perform spherical harmonic analysis on tangential plan and use Legendre-Galerkin spectral method on radius direction. This high order method is efficient and accurate, which can be easily extended to multi-domain scattering. (Received September 25, 2012)