1106-VL-2488 **Hy Dinh*** (hdinh885@g.rwu.edu), Warren, RI , and **Yajni Warnapala**. *The Numerical Solution of the Exterior Impedance (Robin) Problem for the Helmholtz's Equation via Modified Galerkin Method: Super Ellipsoid.*

The Helmholtz Equation, also known as the wave equation, emerges when the topic of electromagnetism and radiation are discussed. It consists of a combination of partial differential equations that investigates how a previously defined object reacts towards incoming waves from all directions. In reality, most surrounding objects are exposed to various types of waves. However, the reactions are neglected for being insignificant and also not observable by the naked eye. I focused on the acoustic aspects of the Helmholtz Equation when the object is submerged underwater or outer space. The surface should be smooth and simply connected. I applied the Green's Functions approach by reducing the problem to a boundary value problem by disregarding what happens in the interior of the desired object and only looking at its membrane. In previous papers, the Neumann and Dirichlet conditions were analyzed. However, for they only study the two extremes of reflecting (Neumann) and absorbing (Dirichlet) the waves that come in contact with the surface, I investigated the more realistic condition that combines the previous two conditions, the Impedance (Robin) condition. (Received September 16, 2014)