

1163-78-438

Cristian Gutierrez and **Henok Z. Mawi*** (henok.mawi@howard.edu). *Numerical Method for the Near Field Refractor Problem.*

In this presentation we will discuss a numerical method to approximate a solution to the near field refractor problem. This inverse problem involves determining an interface between two media that is capable of refracting a light beam of a given illumination intensity emanating from a punctual source in one medium, to rays that will illuminate a certain target set located in another medium while forming a prescribed irradiance distribution on the target set. A mathematical model to the problem and a method of iteratively constructing the solutions for the problem by using a set of primitive surface elements will be shown. More specifically the convergence of the iterative method will be discussed. This is joint work with Cristian Gutiérrez. (Received September 06, 2020)