1172-65-112 **Isaac Harris**, **Dinh-Liem Nguyen** and **Thi-Phong Nguyen*** (nguye686@purdue.edu), Department of Mathematics, Purdue University, 150 N. University St., West Lafayette, IN 47907.

Sampling Methods for imaging scattering objects from near-fields measurements.

We will discuss some recent results on Sampling Methods for solving the inverse scattering problem, which aims to recover scattering objects (scatterers) from the measured scattered field generated by a point source. These methods retrieve scatterers by constructing imaging functionals from the given data with the variable as the sampling point. In this talk, we present two imaging functionals. The first employs a transformation of "near-field" to "far-field" data, while the second uses Cauchy data. In order to analyze the behavior of these imaging functionals, we apply the Funk-Hecke integral identity and the Green's identity. This is a joint work with I. Harris and D.-L. Nguyen. (Received August 21, 2021)