Fall Colloquium Series

An application of the weighted Discrete Hardy inequality
Giao (Selena) Bui, CPP Mathematics

Abstract: Much research has concerned determination of the optimal constant for the classical Discrete Hardy Inequality, and several applications have been discovered as well. In this project, we use a characterization of a weighted version of this inequality to exhibit a sufficient condition for the existence of solutions of the PDE div u = f in weighted function spaces over a certain irregular domain. We will touch on some typical types of weight and examine whether they are good to use for the more general divergence problems.

Keywords: Analysis, divergence problems, irregular domain

Cohomology of quadratic Poisson structures on $\mathbb{R}^3$ and their foliations
Joshua Silva, CPP Mathematics

Abstract: The cohomology of a certain family of quadratic Poisson structures on $\mathbb{R}^3$ can be computed from a general theorem of Caine, Givens, and Lanius. We attempt to geometrically interpret the cohomology classes and emphasize a sort of intuition about these geometric structures on $\mathbb{R}^3$ that can be developed through analysis of examples.

Keywords: Differential geometry, bi-vector fields, foliations

Wednesday, August 29, 1:05 - 1:50pm in 8-210