

"An Introduction to Research in Finite Element Exterior Calculus"

Abstract: Finite element exterior calculus is a recently developed mathematical theory that uses tools from differential geometry and topology to describe suitable discretization techniques for the numerical approximation of solutions to partial differential equations. I will provide a brief introduction to some of the key ideas and modern research topics in this area, based on a motivating problem from electromagnetics. No prior knowledge of any of these areas is required or assumed.