1147-65-757 **Ryan Szypowski*** (rsszypowski@cpp.edu). *Adaptive Finite Element Method for PDEs on Surfaces.* Preliminary report.

The finite element method is a powerful technique for approximating solutions to partial differential equations (PDEs) that is based on rich theory and is efficiently implementable. When used in an adaptive fashion, the method is provably convergent for a wide array of problems. The recently developed Finite Element Exterior Calculus formalism allows the method to be applied to problems with geometric content. This talk will introduce the basics of this formalism, specifically in the context of PDEs on surfaces, and provide some recent theoretical and numerical results. (Received January 28, 2019)