1157-65-592 **Yuwen Li*** (yuwli@psu.edu). *Adaptivity in finite element exterior calculus.*

Using the language of differential forms, Arnold, Falk, Winther developed a unified framework named "finite element exterior calculus (FEEC)" for analyzing numerical problems posed on de Rham complexes, e.g., Poisson, Hodge-Laplace, and Maxwell equations. A priori error estimates based on FEEC are well-established in the literature. On the other hand, a posteriori error estimation and analysis of adaptive algorithms are limited in FEEC. In this talk, I will start with basic concepts in adaptive finite element methods and review recent progress on a posteriori error estimates, convergence, and complexity results of adaptive methods in FEEC. (Received February 04, 2020)