May 11, 2021

**Title**: Derivative-free Optimization for Constrained Least-squares

**Abstract**: Derivative-free optimization (DFO) algorithms are a class of optimization methods for situations where derivatives are unavailable or unreliable. For example, DFO algorithms are often necessary in applications where the objective is noisy, computationally expensive, or black box. Least-squares problems arise across a wide variety of disciplines, and optimization algorithms for solving them are well-established. While progress has been made to exploit the least-squares problem structure in unconstrained DFO methods, such methods have not yet been extended to handle arbitrary constraints. As it stands, one must use general DFO algorithms for constrained optimization. This talk will introduce the design of DFO algorithms for constrained least-squares, and compare the efficiency of such an algorithm to those that do not exploit the least-squares structure.