1158-90-329   **Juliane Mueller*** (`julianemueller@lbl.gov`), 1 Cyclotron Rd., MS 50A-3111, Berkeley, CA 94720. *Efficient optimization of computationally expensive black-box problems with constraints.* Preliminary report.

In this talk, we describe an efficient method for solving optimization problems that have expensive-to-evaluate black-box objective and constraint functions. The objective and the constraints are independent, and thus we first evaluate the constraint to assess the feasibility of a proposed solution before committing to spending more time on evaluating the objective function. We use separate Gaussian process models to approximate the objective and the constraints and we compare different adaptive sampling strategies for iteratively selecting new sample points. Finally, we show the performance of our method on an application problem that arises in the search for more efficient fuels by simulation. (Received March 03, 2020)