Meeting Summary

Peak shaving control reference obj

<https://ieeexplore.ieee.org/document/8027056>

Peak shaving only control level curve

<https://www.sandia.gov/ess-ssl/EESAT/2013_papers/Peak_Shaving_Control_Method_for_Energy_Storage.pdf>

B\_t = dSOC/dt

1. Discussed Code, Plots, Covariance computations
2. In Code, X\_0 has issues (1) range is from [-10,10] uniform . Stationarity is not issue in GPR . (2) Sampling X0 from invariant distribution results in model only good for X0 coming from invariant distribution. (3) Cor(X\_t,I\_t) problem

To do:

1. For objective function: Consider integral from 0 to T Y^2 = (St – Bt)^2 dt . So that Bt has to match St. If we consider more convex like Y^10. May be it focus on extreme peak penalty?
2. With this cost, look how Cost change with I\_max, B\_max. 2-d plot. Also, with more convex cost
3. Second paper might be a nice benchmark
4. In first paper, look at how to compute integral OU up to hitting time. That gives I\_max. (or B\_max??). Look at computing length t that is above or below to get??.
5. Get mean and Cov(SOCt,SOCs) since it’s gp and look papers to determing the maximum distribution.
6. Complete finding distribution of SOC(t+dt) – SOC(t) /dt