Particle MPC with chance constraints [2]

Problem setup is is precisely along the lines of what we originally intended, albeit on a convex problem. However, it goes not allow for the control input to be a function of state as well as time. AFAIK, there is no mention of this limitation or possible solutions for it.

Particle Methods for Change Detection, System Identification, and Control [1]

Particle methods for maximum likelyhood estimation. Some involve computing gradients from said samples.

Stochastic model predictive control: An overview and perspectives for future research [3]

Nice overview of SMPC from 2016

"Stochastic output-feedback model predictive control" [4]

Recommended by Schwager in phone call

References

[1] Christophe Andrieu et al. "Particle methods for change detection, system identification, and control". In: *Proceedings of the IEEE* 92.3 (2004), pp. 423–438.

[2] Lars Blackmore et al. "A probabilistic particle-control approximation of chance-constrained stochastic predictive control". In: *IEEE transactions on Robotics* 26.3 (2010), pp. 502–517.

[3] Ali Mesbah. "Stochastic model predictive control: An overview and perspectives for future research". In: *IEEE Control Systems* 36.6 (2016), pp. 30–44.

[4] Martin A Sehr and Robert R Bitmead. "Stochastic output-feedback model predictive control". In: *Automatica* 94 (2018), pp. 315–323.