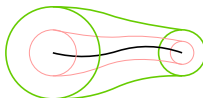


Robust Direct Trajectory Optimization

Using Approximate Invariant Funnel

Journal Club, Team 3



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DFKI Robotics Innovation Center Bremen



Introduction	Direct Transcription	Direct Transcription With Ellipsoidal Disturbances	Connections to Sum-of-Squares Methods	Examples
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- 1 Introduction
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- 4 Connections to Sum-of-Squares Methods
- 5 Examples



Introduction



Reference

- Z. Manchester and S. Kuindersma, "DIRTREL: Robust Trajectory Optimization with Ellipsoidal Disturbances and LQR Feedback"

Contribute

- In the case of ellipsoidal disturbance sets, fast evaluations of robust cost and constraint functions.
- Algorithm that improves tracking performance over non-robust formulations while incurring only a modest increase in computational cost.
- Evaluation of the algorithm in several simulated robot control tasks.

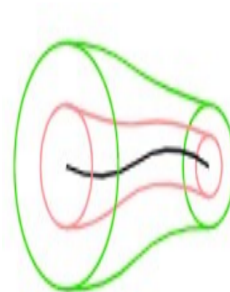


Figure 1: running man

Direct Transcription



Direct Transcription With Ellipsoidal Disturbances



Connections to Sum-of-Squares Methods



Examples

Thanks for your attention