

Control Theoretic Splines with Constraints

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Abstract:

It is well known that the interpolating cubic spline can be viewed as a solution of the double integrator linear-quadratic regulator problem. This fascinating connection between the classical approximation theory and the theory of optimal control has been re-discovered by a number of researchers in different times.

In this talk I will review some developments on control theoretic splines with additional requirements, such as convexity and restricted range, and show how to handle the constraints both theoretically and numerically.