Modeling Camp Seminar: Project Problem Statement

Group 2:
Enxhi Sabrija
Sarthak Singh
Mayank Raj Jha
Bhargav Ramudu Manam

Fastest Destination Optimal Control

Problem Statement:
The problem is to drive the train to a station and stop it there in a minimal time.

Objective:
To use the Pontryagin maximum principle to find the fastest stop of a train we will also use Filippov's theorem and bellman's equation for the verification of optimal controls. Pontryagin principle is used in optimal control theory to find the best possible control for taking a dynamical system from one state to another, after solving our problem mathematically we will implement it in matlab/python. I don't think that this type of problem is ever implemented in matlab/python or properly solved mathematically considering a particular case, so it will be very helpful for the generation to get a better understanding and implementation of Pontryagin maximum principle through this problem. (reference1)

References:

1.https://link.springer.com/chapter/10.1007/978-3-662-06404-7_13

2.http://www.bcamath.org/documentos_public/courses/Course_Lohe

ac.pdf

3.https://github.com/wanxinjin/Pontryagin-Differentiable-

Programming