

120. Characterizations of string stability of interconnected automobile systems

Matthew Rose Roger Williams University

Advisor(s): Hasala Senpathy Gallolu Kankanamalage, Roger Williams University

String stability plays an important role in modeling self-driving automobile systems and automated smart traffic flow systems. This plays an important role specially in designing Adaptive Cruise Control (ACC) systems and Cooperative Adaptive Cruise Control (CACC) systems. In this work we present a few variants of string stability conditions and we analyze these variants. We provide characterizations for certain types of string stability. We analyze theoretical significance of these stability notions together with numerical validations.