# Appendix

**Proof of Theorem 1:** Consider the following Lyapunov function



where  with , , , ,  and  is a constant satisfying  with . Denote ,  and , . Then, the following equation can be obtained



Through and , by denoting , the time derivative of  is



It should be noticed that , , , , . Combing these above inequality, becomes



where , . It is easily verified that  and . Besides, the same deduction applies to  and . Therefore, it follows from that  and hence , , , . From the boundedness of  and , it is deduced the boundedness of , , , ,  and . The proof is completed.