THE UNIVERSITY OF HONG KONG

DEPARTMENT OF MECHANICAL ENGINEERING

SEMINAR

Online

Title: **Consensus for Positive Multi-agent Systems with Input Saturation**

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Date: **29 April, 2021 (Thursday)**

Time: **10:30 a.m.**

Zoom Link: **1) Link to join the meeting:**

https://hku.zoom.us/j/99458991138?pwd=K2tBOS96a1ZRVXRsdi9qMGZ5TmNWQT09

2) Meeting ID: 994 5899 1138

3) Password: 325951

Abstract:
A multi-agent system composed of a set of interacting agents can solve many engineering problems by cooperation, coordination and negotiation of agents, that are difficult or impossible for an individual agent to solve. Therefore, the research on multi-agent systems has received much attention and made wide applications in many fields such as smart grids, industrial production, computer networks, and robotics. In many multi-agent systems, the states of agents intrinsically remain in the nonnegative region within the state space. They are referred to as positive multi-agent systems, which widely exist in networks consisting of integrators or double integrators. In practice, due to safety reasons and physical constraints, such as energy, space, and specific actuator structure, multi-agent systems may have nonlinear dynamics and are subjected to input saturation, which lead to major difficulties in both analysis and synthesis. In this talk, the consensus problem for positive multi-agent systems with input saturation will be discussed and a method to design a feedback matrix will be proposed such that the closed-loop positivity constraints and the consensus conditions can be simultaneously satisfied.

ALL INTERESTED ARE WELCOME
For further information, please contact Prof. J. Lam at 3917 2805.

Research area: Robotics and Control