



# APPLIED MATHEMATICS SEMINAR

## Consensus Problem on Networks with Information Transmission Delays and Anticipation

by

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**Abstract:** We consider the consensus problem on undirected and connected graphs of anticipatory agents in the presence of information transmission delays. The agents anticipate the states of their neighbors using past information, thereby introducing an additional delay into the dynamics. We find a sufficient condition in terms of delays and the network topology for the system to reach consensus from arbitrary initial conditions. We show by numerical simulations that employing anticipation increases the speed of convergence to consensus.

**Date:** Monday, May 29, 2023

**Time:** 17:00-18:00, GMT+3

**Place:** ZOOM

To request the event link, please send a message to [yheydarzade@bilkent.edu.tr](mailto:yheydarzade@bilkent.edu.tr).