

AIPHA/LIAM 2026 Summer Program

Distinguished Lecture By:



Dr. Junyuan Yang
Shanxi University

Title: Parameter identification of
age-structured epidemic models

Date: Wednesday, June 10, 2026

Time: 10:30 - 12:00 PM

Location: Rm 277, LIAM, Kinsmen Building

Abstract

Parameter identifiability analysis aims to determine whether model parameters can be uniquely determined from observable outputs. This is a critical step in epidemiological forecasting and the design of effective control measures. In this talk, we systematically review the theoretical foundations and practical applications of parameter identifiability and propose a framework for analyzing structural model parameter identifiability. By integrating locally and globally identifiable techniques, we systematically construct a hierarchical structure for parameter identifiability in age-structured epidemic models. Using Monte Carlo simulations and approximate Bayesian estimation methods, we identify parameters that are actually unidentifiable in the models. This is a joint work with Ziyi Wu and Maia Martcheva.

Dr. Junyuan Yang's Short Bio

Junyuan Yang, Ph.D., Professor, Complex systems research centers, Shanxi University in Shanxi. Dr. Yang received his Ph.D. from Beijing Institute Information and Control. He had done his postdoctoral job at Wilfrid Laurier University from 2012 to 2013. He had also visited University of Florida from 2014 to 2015 and University of Victoria from 2025 to now. He has published more than 100 papers in peer-reviewed journals and is serving as editorial board members of two international journals. He has served as the principal investigator multiple projects funded by the National Natural Science Foundation of China. His research interest is mathematical biology, game theory, complex networks.