

**Indiana University-Purdue University
Indianapolis**
Department of Mathematical Sciences

STATISTICS SEMINAR

12:15pm—1:15pm, Tuesday, September 05, 2023
Zoom Meeting: Meeting ID: 845 0989 4694

Speaker: Subir Kumar Chakrabarti
Department of Economics, IUPUI

Title: Markovian Dynamics in Asynchronous Stochastic Models

Abstract:

We study Asynchronous Stochastic Dynamic Models in which a single agent chooses in each period. It is known that if the models are deterministic then Markov-perfect equilibrium may not exist. Here we show that if the model is stochastic, that is the state variable in the next period depends stochastically on the current period's actions and state, then a pure strategy Markov-perfect equilibrium exists for a finite horizon model, and for the infinite horizon model a Markov-perfect equilibrium exists in mixed strategies, and a pure strategy perfect equilibrium exists in semi-Markov strategies. Further, when the model is sufficiently stationary then stationary equilibrium exists. We show that the results can be applied directly to dynamic oligopoly models, dynamic principal-agent models and dynamic models of production.

Bio:

Dr. Subir Chakrabarti is a professor of Economics in the Department of Economics at IUPUI. Dr. Chakrabarti earned his doctoral degrees in Economics from the University of Iowa in 1985. His research interests lie in Economic Theory with a primary focus in game theory and its applications in economics, in particular in cooperative and non-cooperative game theory including stochastic games, repeated games, dynamic games and dynamic economic models..