

METHODS AND APPLICATIONS OR APPLICATIONS AND METHODS?

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ABSTRACT

Stochastic simulation is a powerful framework for supporting decision makers in a broad range of applications. Its methods draw upon applied probability, system dynamics, statistics, computing, and other fields. Simulation methods are interesting in and of themselves, including uncertainty modelling, stochastic optimization, the valuation of uncertainty, efficiency improvement, and the modelling of complex system behavior that might be hard to analyze through closed-form analysis. Applications may sometimes have standard approaches to support the analysis to inform a decision maker, but decision makers may also have criteria that are not reflected fully in a simulation model. And sometimes new applications give rise to very interesting structures that call for further analysis. In this talk, we discuss the feedback loop between methods development that allow new applications to be addressed, and new applications that give rise to new methods.

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STEPHEN CHICK is a Professor of Technology and Operations Management at INSEAD. He is the Academic Director of INSEAD's Healthcare Management Initiative and Novartis Chair of Healthcare Management. He earned his MS and PhD from the University of California at Berkeley in Industrial Engineering and Operations Research and his BS in Mathematics from Stanford University. Prior to joining INSEAD, he taught process modeling, simulation, and information systems as a faculty member at the University of Michigan and had worked for five years in the automotive and software industries. He has served in INFORMS editorial roles and subdivision officer positions in the INFORMS Simulation and Health Applications Societies. His research includes Bayesian learning, stochastic simulation, and mathematical models to inform health decision-making and policy.