Keynote presentation

The Near-term Future of Dynamic Traffic Assignment

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Abstract

This talk provides a brief overview of presently employed urban transportation network models that are explicitly dynamic. From there it moves on to discuss how the mathematical formalism needed for modeling traffic networks must evolve if it is to be effective in a fundamentally dynamic environment characterized by increasingly rapid technological change. We compare and contrast the modeling needs of transportation planners, social scientists, engineers, logisticians, and supply chain professionals involved in transportation research. We consider the multi-timescale, multi-spatial scale, and multi-agent environment in which transportation modelers must practice their art, and weigh what mathematical perspectives will yield the best analytics. In our conclusion, we offer opinions about what curriculum changes and midcareer training are required in various disciplines.

Bio

Terry L. Friesz is the Harold and Inge Marcus Chaired Professor of Industrial Engineering at Penn State, where he also Director of the Center for Service Enterprise Engineering. He has previously been a faculty member at MIT, George Mason University, and the University of Pennsylvania, where he held the UPS Foundation Chair in Transportation. He received his PhD from Johns Hopkins University, where he studied operations research and spatial economics. His research emphasizes the application of differential game theory to transportation, location, spatial price equilibrium, urban supply chains, and revenue management. His work has appeared in *Operations Research, Transportation Research Part B, Transportation Science, Mathematical Programming, The Journal of Regional Science, Regional Science and Urban Economics, Environment and Planning* and other scientific journals. He is Editor-in-Chief of *Networks and Spatial Economics* and Associate Editor of *Transportation Research Part B.*