



An Introduction to Traffic Flow Theory (Springer Optimization and Its Applications)

By Lily Elefteriadou



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This text provides a comprehensive and concise treatment of the topic of traffic flow theory and includes several topics relevant to today's highway transportation system. It provides the fundamental principles of traffic flow theory as well as applications of those principles for evaluating specific types of facilities (freeways, intersections, etc.). Newer concepts of Intelligent transportation systems (ITS) and their potential impact on traffic flow are discussed. State-of-the-art in traffic flow research and microscopic traffic analysis and traffic simulation have significantly advanced and are also discussed in this text. Real world examples and useful problem sets complement each chapter.

This textbook is meant for use in advanced undergraduate/graduate level courses in traffic flow theory with prerequisites including two semesters of calculus, statistics, and an introductory course in transportation. The text would also be of interest to transportation professionals as a refresher in traffic flow theory, or as a reference. Students and engineers of diverse backgrounds will find this text accessible and applicable to today's traffic issues.



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"This book presents the basics of traffic flow theory and associated applications. ... The book is very well written, with excellent graphics, examples, problems, references, and resources for further reading. ... This book would be an ideal text for an introductory course in traffic flow theory and a useful refresher for experienced engineers. Summing Up: Highly recommended. Lower- and upper-division undergraduates and professionals/practitioners." (W. J. Sproule, Choice, Vol. 51 (10), June, 2014)

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From the Back Cover

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About the Author

Dr. Lily Elefteriadou is the Director of the Transportation Research Center and Kisinger Campo Professor of Civil and Coastal Engineering at the University of Florida. She received her M.S. in Civil Engineering from Auburn University, and her Ph.D. in Transportation Planning and Engineering from Polytechnic University in New York. Her 2010 paper "A Driver Behavior Based Lane-Changing Model and Its Implementation in CORSIM," co-authored with Daniel Jian Sun, was awarded Best Model Development Paper by the Transportation Research Board. She is also the recipient of the 2003 Outstanding Research Award from Penn State Engineering Society, as well as a Fulbright Scholar.

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