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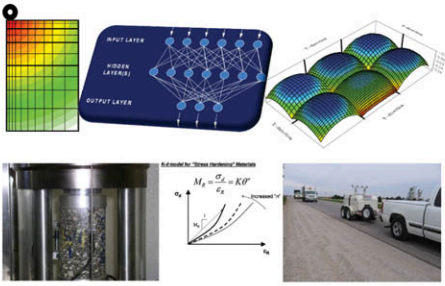
Performance Modeling and Evaluation of Pavement Systems and Materials



Edited by
Halil Ceylan
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EDITED BY
Halil Ceylan, Ph.D.
Xueyan Liu, Ph.D.
Kasthurirangan Gopalakrishnan, Ph.D.
Likui Huang

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Preface

The papers contained in this Geotechnical Special Publication (GSP) entitled, Performance Modeling and Evaluation of Pavement Systems and Materials, cover research topics in the areas of hot-mix asphalt constitutive modeling, pavement responses under dynamic loading, moisture damage and permanent deformation in asphalt concrete, asphalt and Portland cement concrete evaluation, and pavement performance assessment. Analysis approaches include three-dimensional finite element modeling techniques, matter element modeling, Fuzzy complex matter element modeling, neural networks, Grey theory, and similarity analysis. Relationship between the loading surface and conductivity of smart asphalt concrete, analysis of crack resisting mechanism in asphalt macadam base, cohesive crack model based on bounding surface concept for asphalt concrete, mix design of pervious recycled concrete, development of a large algebraic solver for structural mechanics, etc. are also discussed. Infrastructure engineers working within transportation and geotechnical facilities with special interest in pavement constitutive modeling, performance and evaluation will find this publication of particular interest.

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