



Experimental Testing and Constitutive Modelling of Pavement Materials

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Message from the Guest Editors

Dear Colleagues,

Pavement materials such as asphalt mixtures, granular aggregates, and soils exhibit complex material properties and engineering performance under external loading and environmental conditions. For instance, the asphalt mixture shows highly nonlinear viscoelastic and viscoplastic properties at high temperatures, and it presents fatigue cracking damage and fracture properties at intermediate or low temperatures. Constitutive models based on mechanics theories have been the kernel of performance prediction of pavement infrastructures and materials. They lay down a solid foundation for material selection, design and pavement structural evaluation, and maintenance decisions. Advances in mechanics modeling and the associated experimental testing for pavement infrastructures and construction materials are emerging constantly, such as nonlinear viscoelasticity, viscoplasticity, fracture, and damage mechanics models.





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