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Nota di contenuto	Part I Cracking in Asphalt Materials -- Fundamental bituminous material characteristics -- Cracking and Linear Visco Elastic Binder Properties, by Rowe Geoffrey et al. -- Evaluation of Fatigue Behavior of Aged Asphalt Mixtures Using the Simplified Viscoelastic Continuum Damage Model, by Babadopoulos Lucas et al. -- GB5 Mix Design: a new approach for aggregate grading optimization for heavy duty flexible pavements, by Pouget Simon et al. -- Modelling the Hysteresis Loops of Hot Mix Asphalt, by Ahmed Taher -- Prediction of hot mix asphalt stiffness behavior by means of multiscale modeling, by Eberhardsteiner Lukas et al. -- Simulation of the asymptotic behaviour of bituminous mixtures using the Discrete Element Method, by Nguyen Minh Duc et al. -- Visco-plastic behavior of bituminous mixtures: experiments and modeling, by Gayte Pierre et al. -- Material Crack Characterization -- Effect of fiber grid reinforcement on crack initiation and propagation in

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#### Sommario/riassunto

This book presents the latest advances in research to analyze mechanical damage and its detection in multilayer systems. The contents are linked to the Rilem TC241 - MCD scientific activities and the proceedings of the 8th RILEM International Conference on Mechanisms of Cracking and Debonding in Pavements (MCD2016). MCD2016 was hosted by Ifsttar and took place in Nantes, France, on June 7-9, 2016. In their lifetime, pavements undergo degradation due to different mechanisms of which cracking is among the most important ones. The damage and the fracture behavior of all its material layers as well as interfaces must be understood. In that field, the research activities aims to develop a deeper fundamental understanding of the mechanisms responsible for cracking and debonding in asphalt concrete and composite (e.g. asphalt overlays placed on PCC or thin cement concrete overlay placed on asphalt layer) pavement systems.