

عنوان مقاله:

New Model for Visco-Elastic Behavior of Asphalt Mixture with Combined Effect of Stress and Temperature

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خلاصه مقاله:

The analysis of pavements and their ingredients has always been important due to a good understanding of their behavior under different conditions; that leads to more accurate relations. Due to the extent of asphalt mixture application in the world, the assessment of different behaviors of this mix is very important from various aspects of performance and safety. Given that the asphalt mixtures are inherently very sensitive to temperature changes due to bitumen content, identification and analysis of the viscoelastic and visco-elasto-plastic behavior of the mixture is of particular importance. The scope of present research is to provide new model of viscoelastic behavior of asphalt concrete pavements with a combined effect of stress and temperature using genetic programming techniques. For this purpose, a number of dynamic creep tests under various temperatures and different stress levels were done. Beside, in this study a comparison is made between the generalized model and proposed model in estimating the visco elastic response of asphalt samples. Performance of the genetic programming model is quite satisfactory. The new proposed model will also help further researchers willing to perform similar studies, without carrying out destructive tests.

کلمات کلیدی:

Creep, Visco, elastic Model, Asphalt Mixture, Generalized Model, Genetic programming

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