

Ergonomic Design of Speed Control Humps/Dips

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Abstract : Newly developed Ergonomic speed control hump/Dip designs are conducted. The numerical simulation for the driver-vehicle-hump dynamic system will be performed using computer software. The design problem for which the speed hump or dip should provide: (1) discomfort feeling to the driver if speed is over the specified limit, and (2) normal/good comfort level to the driver (and or other passengers) if the speed is within the limit. For comparison reasons, different vehicles suspension systems (active, semi-active and non-active suspension) are used in the simulation. The measuring of the acceptable range of vibration will be referenced to the British standard BS6841, ISO 2631/1 and the new ISO 2631/5. All these standards are related to human health and comfort level in terms of acceptable range of whole body vibration exposure.

Keywords : speed hump, speed dip, ergonomic design, human health, vehicle modeling

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