

Ride quality of high-speed trains traveling over the corrugated rails

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Ride comfort of high-speed trains is studied using Sperling's comfort index. Dynamic model is developed in the frequency domain and the power spectral density (PSD) of the body acceleration is obtained for four classes of tracks. The obtained acceleration PSD is then filtered using Sperling's filter. The effects of the rail roughness and train speed on the comfort indicators are investigated. A parametric study is also carried out to evaluate the effects of the primary and secondary suspension systems on the comfort indicators