

## **Application of the delayed resonators in active suspension systems of high-speed trains**

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Application of the multiple delayed resonators in suppressing tonal vibration of a coach body is studied in this paper. The excitation arose from the random nature of the rail corrugation is modeled by harmonic and random inputs. Using a standard power spectral density (PSD), the rail surface roughness is generated by application of the Monte Carlo simulation in random space. In order to have a comparison, a tuned mass damper (TMD) system is also designed. The performances of these two controller systems i.e. TMD and DR are investigated for variety of excitations