

عنوان مقاله:

Analytical Matching of Optimal Damping Characteristics Curve for Vehicle Passive Suspensions

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خلاصه مقاله:

To facilitate the damping matching of dampers for vehicle passive suspensions, this paper proposes an analytical matching method of the optimal piecewise linear damping characteristics curve. Based on the vehicle vibration model, taking the suspension dynamic deflection as the constraint, by the vibration acceleration and the wheel dynamic load, an objective function about the relative damping coefficient was created. Using the integral mid-value law, an analytical formula of the optimal relative damping coefficient was established and the analytical matching method of the piecewise linear damping characteristics curve was presented. With a practical example, the effectiveness of the proposed matching method was validated by road test. The results showed that the method presented is workable, which has important reference value for fast damping matching of vehicle passive suspensions.

کلمات کلیدی:

Passive Suspension, Relative Damping Coefficient, Characteristics Curve, Integral Mid-value Law, Analytical Matching

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