

Characteristics and Durability Evaluation of Air Spring

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Abstract : Air spring system is widely accepted for railway vehicle secondary suspension to reduce and absorb the vibration and noise. The low natural frequency ensures a comfortable ride and an invariably good stiffness. In this paper, the characteristic and durability test was conducted in laboratory by using servo-hydraulic fatigue testing system to reliability evaluation of air spring for electric railway vehicle. The experimental results show that the characteristics and durability of domestically developed products are excellent. Moreover, to guarantee the adaption of air spring, the ride comfort and air pressure variation were measured in train test on subway line. Air spring developed by this study for railway vehicles can guarantee the reliability of average usage of 1 million times at 90% confidence level.

Keywords : air spring, reliability, railway, service lifetime

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