

Fundamental Study of the Generation Mechanism of the Wheels Wear Shapes

Junichi NAKAHASHI Daiki SANNOMIYA

Shoichiro KAWAKAMI Hajime TANIMOTO

It is known that the running safety and the riding quality are deteriorated by abnormal vibration that is caused by concave wear and partiality wear of the wheel tread. In order to elucidate the generation mechanism of concave wear and partiality wear of the wheel tread, the wear developments tests with use of high-speed contact fatigue testing machine and the wheel wear simulations were carried out. As a result, it has been understood that the concave wear is affected by the lateral vibration, but the effects the vertical load fluctuation load on partiality wear is not observed. As the result of the running stability analysis by using the wear shape obtained by the wheel wear simulations, it has been found out that the hunting limit speed is different depending on the wear shapes.