

Assessment of Application of Lubricant to Wheel/Rail Interface in Curves

Hua CHEN Shinya FUKAGAI Yasutomo SONE

Hisayo DOI Takumi BAN Akira NAMURA

Lubrication between wheel and rail is generally known to decrease the friction between wheel and rail, resulting in the reduction of wheel flange wear, rail gauge face wear, low-rail corrugations and the squeal noise. However, the type of lubricants and their supplying method adopted by railway operators are not necessarily reasonable or effective. This paper describes a fundamental study on the basic characteristics of various types of lubricants such as effect on traction behavior of vehicle, spreading rate on the rail surface and effect on vehicle/track dynamic behaviors (focused on the lateral force interacting between wheel/rail interface), and propose appropriate lubrication method according to the track geometry of curves and train speeds.