

Examination of the Effect of Attack Angle on Rail Wear Development

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Rail wear does not develop in a short term, but it closely relates to crack initiation. Therefore, it is very important to predict the wear development of a rail. The wear of a rail occurs more outstandingly at curved sections than straight sections. At a curved section, wheels pass with an attack angle, which gives rise to not only longitudinal slips but also lateral slips at the wheel/rail contact patch. The previous research treated both slips equally as the effect. In this research, we conducted wear experiment by use of wheel/rail rolling contact test equipment to examine the influence of lateral slips on wear development. Furthermore, the wear experiment was conducted under the mixed slip conditions. As a result of the experiments, we reveal that the wear development under the mixed slip conditions can be evaluated by the contribution ratio of longitudinal slip and lateral slip.