Improvement of Traction Force and Effect of Shortening Powering Time by Slip Control

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Generally, the slip control performance of a railway vehicle is evaluated according to the average traction force or the average train acceleration under a wet condition of rails assuming bad weather. The purpose of this paper is to give a general understanding of the effect of improving traction on stable transportation. Accordingly, based on recent models of electric locomotive trains and EMUs, we conduct a survey by running simulation with different running conditions such as gradient and mileage. As a result, we find that the effect of shortening the powering time by improving the traction force is exhibited in steep gradient sections, and it is highly effective in locomotive trains having a large load capacity.