

## **Effect of Temperature Change and Contact-Wire Wear on Current Collection Performance**

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For electric railway, it is preferable that the tension and the height of overhead contact line are constant to maintain satisfactory current collection performance. Since overhead contact line expands and contracts according to temperature change, an automatic tension balancer is generally equipped at the terminations. However, the tension of overhead contact line is not always constant because of the tension fluctuation of an automatic tension balancer and the gradient of yokes. In addition, the contact wire wear decreases its mass. This also affects the tension and the height of it. The authors performed a theoretical study and a simulation to examine the effect of temperature change and contact-wire wear on current collection performance.