

Modeling for Longitudinal Displacement of OCL and Method for Calculating Its Equilibrium Points

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Overhead contact lines (OCLs) are subject to longitudinal displacement due to factors such as temperature changes and external forces. Excessive longitudinal displacement may prevent the tensioning devices from performing their proper tension adjustment function. It is therefore important to develop a method for calculating the longitudinal displacement of OCLs and to be able to predict the longitudinal displacement in response to changes in temperature and external forces. This paper presents a model to represent the longitudinal displacement of OCLs on a curved track installing tensioning devices and hinged cantilevers at each support point and proposes a method for calculating the equilibrium points of the longitudinal displacement of the OCL. Furthermore, the proposed calculation method was verified by scale model tests.