

## **Method for Measuring the Pantograph Contact Force in Overhead Contact Line System Using Sparse Modelling**

Takayuki USUDA      Yoshitaka YAMASHITA      Masaki TAKAHASHI

In order to understand the wear mechanism of contact wire and to efficiently prevent OCS failure, the authors have so far developed a method for measuring contact forces of all pantographs during trains passing on sections with sensors installed on the overhead contact line. However, some difficult issues remain in the method for computing the inertial force from contact wire acceleration measured at some measurement points. This paper proposes a method for selecting effective measurement points for contact wire acceleration. LASSO regression, known as one of the sparse modelling techniques, is applied to the proposed method so that suitable points for measuring acceleration are selected for computing inertia force. The results obtained by the proposed method are shown using dynamic simulation data.