

Measurement of the Contact Force of Pantograph by Image Processing Technology

Tatsuya KOYAMA Mitsuru IKEDA Kotaro NAKAMURA
Shigeyuki KOBAYASHI Seiji TABAYASHI Makoto NIWAKAWA

Contact force between a pantograph and a contact line is one of the most important criteria to evaluate contact performance of the overhead contact line system. Hence, some contact force measuring methods have been developed. However, currently-used measurement methods have some problems. Firstly, installation of sensors in a panhead affects dynamic characteristics of the pantograph. Secondly, they need data transmitting equipment, because built-in sensors are set under high-voltage condition. Thirdly, some kinds of pantograph cannot be equipped with sensors in a panhead because of structural restriction. To eliminate these problems, the authors have developed a new contact force measuring method by using image processing sensors mounted on the roof-top of a train.