

## **Valeriy Kuznetsov: Modelling of the Dynamic Interaction between the Contact Line and Pantograph Based on the Finite Element Method**

The use of high-speed electric rolling stock imposes increased requirements on the reliability of current collection. Special attention should be paid to the interaction of overhead contact line (OCL) with current collectors, therefore the development of tools for modelling the OCL interaction with current collectors is important. At present, there are plans to increase the speed of trains on certain sections of railway lines and the requirements for OCL design should be adapted for this purpose. This will enable the owner of the infrastructure to obtain appropriate parameters for the dynamic interaction of OCL and pantographs in accordance with the Energy TSI requirements. An effective tool for the development and improvement of power supply systems is the mathematical simulation of the dynamic interaction of pantographs and OCL. This paper presents an approach to the simulation of the dynamic interaction based on the finite element method.

**Keywords:** catenary, dynamic interaction, pantograph, simulation