Proposal of a Mechanism for Setting Bogie Wheelsets to Radial Position while Riding Along Track Curve

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Passing of vehicles along curved track is a serious technical problem, which needs special attention. It is especially actual in the environment of urban lines, where it is necessary to pass a track of small radius. There is a significant strain of track as well as tram´s bogies. It results in excessive wear in rail-wheel contact. Considerable is also the noise caused by operation on such track. Behavior of the vehicle when riding along track curve is influenced by the wheelset guidance design. If the wheelset guidance is able to set the wheelsets in track curve to a radial position, mitigation of the negative phenomenon can be expected. This paper deals with a design of a mechanism for setting wheelsets in a track curve to a radial position for tram cars. Dynamical analysis of a simplified tram car model was performed. Courses of monitored values of bogie with and without designed mechanism are compared.

Keywords: wheelset steering mechanism, simulation analysis, creep velocities in wheel – rail contact.

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