



STRAHOS 2022
19th Seminar of Track Management
13 and 14 October 2022, Poprad, Slovakia

Workshop 'Research Activities of Young Researchers in Railways'

GEOMETRY CHANGE IN SWITCH FROGS

Suwitcha Kanteewong*

* Technische Universität Dresden Chair of Planning and Design of Railway Infrastructure,
01062 Dresden, Germany.
suwitcha.kanteewong@mailbox.tu-dresden.de..

Abstract

The service life of a crossing depends on the switch frog and the wing rail. In the case of the trailing direction, the wing rail would break out before the switch frog. However, the service life of switch frog is shorter than the wing rail by facing direction. Additionally, in cases of facing direction, the wing rail also affects the wheel transition. Its changes in geometry are therefore considered. Measured Data from 13 crossings are examined, all of which are made of the same material. The initial geometry of the switch frog results in a different running surface and accordingly a different wheel-rail contact area for each switch frog. The measured data depicts the various wear surfaces and wear surface rates for each switch frogs. Consequently, this affects the wear development and ultimately the service life of the crossings. For this reason, this study aims to examine the influence of the wear surface on the changes in switch frog geometry. The outcome, the geometry of the switch frog, is a function of the wear surface and the longitudinal axis. This derives from several measurement times for each cross section, which can correspond to a geometry modification.

Keywords

service life; switch frog geometry; wheel-rail contact; wear surface.

Acknowledgments

I would like to acknowledge Dr.-Ing Ulf Geber. I would also like to thank Franziska Kluge. I would like to thank the DB Systemtechnik GmbH for the measured data. I would like to express my gratitude to Office of Educational Affairs The Royal Thai Embassy.

This work was supported by the Grant No. 22120015. The project is co-financed by the Governments of Czechia, Hungary, Poland and Slovakia through Visegrad Grants from International Visegrad Fund. The mission of the fund is to advance ideas for sustainable regional cooperation in Central Europe.

