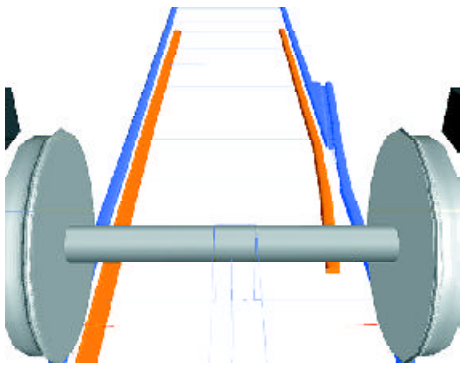
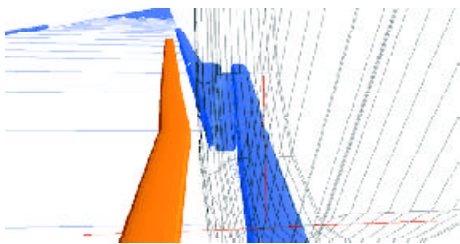


# SIMPACK Rail Switches – Switches, Points and Crossings

The simulation methods required in the rail industry can be described as challenging, especially when referring to the progression of wheels over rails with changing profiles, in particular over switches. A new SIMPACK module enables the simulation of switches and includes real switch data and expert training.



Wheelset Running through a Switch



Crossing Vee (Close up)

Running through switches and crossings as well as rail extensions requires the ability of the software to incorporate changing rail profiles—in SIMPACK these are called “s-variable profiles”, where “s” signifies the distance along the track.

Application areas of s-variable profiles are:

- Optimisation of profile geometry
- Analysis of ride comfort and wheel forces, also in switches and crossings
- Vehicle-on-track guidance analysis used to calculate the position of the wheel-to-rail contact points and compliance with safety measures
- Investigation of the effects of rail-wear at curve entry and exit
- Investigations into the consequences of cyclic rail wear, a result of hunting in straight sections

One must distinguish between various application areas because different software functionalities are required. S-variable profile functionality is available with the standard SIMPACK Wheel/Rail module while the inclusion of back-of-wheel contact requires the SIMPACK Rail Switch module. Contact on the back of the wheel is necessary, for example, when modelling check rails in switches, which prevent the wheels from deviating

onto the incorrect track, or when modelling guard rails, which are used to reduce the risk of derailment.

SIMPACK version 8.6 introduces a new module; SIMPACK Rail Switches. This module has been designed for customers who work intensively with switch simulations and comes as a package, which contains everything that is required. The module contains a complete example model of a standard switch (EW 60-300-1:9) along with a basic simulated railway car. In addition, two days intensive training is given which teaches the “basics” of understanding switch simulation and includes hands-on exercises which cover how to include switch data, from drawings or tabular format, into SIMPACK. The pack also contains the license required for back-of-the-wheel contact. The use of simple s-variable wheel/rail profiles, without the guard rail contact, will still be possible with SIMPACK Wheel/Rail. For current users of SIMPACK Wheel/Rail (v8.5), the Rail Switches module will be available as an upgrade in the form of training and an example model.

SIMPACK Rail Switches offers the perfect solution for engineers who want to undertake problems concerning vehicle guidance and driving dynamics with points and crossings.