SIMPACK RAIL SWITCHES

SIMPACK 8.6 introduced the module, SIMPACK Rail Switches. It enables users to simulate switches and crossings, along with other rail components which require an additional contact on the back of the wheel.

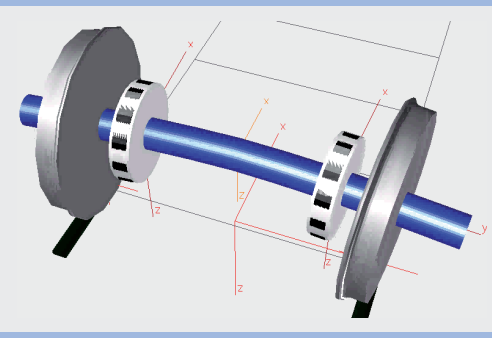
In addition to the module, a one-day training course is also provided with the Rail Switches licence. The course covers the differences between s-variable and s-constant profiles, the set-up of profile cross-sections, the assembly of profile data and the use and analysis of the switch in SIMPACK.

During the course, the participants are given an example model containing a standard switch (EW-UIC 60-300-1:9, created by INTEC), along with a passenger vehicle.

The next SIMPACK Rail Switches training course will be on the 14th May 2004. For details please contact Ms. Engert.

WHEELSETS WITH ELASTIC AXLES IN SIMBEAM

For an accurate simulation of drive-trains in railway vehicles, it is particularly important to look at the vibrational behaviour of the wheelset axle (torsion and bending). Instead of modelling the flexibility using spring elements, it is possible to model the wheelset axle with SIMBEAM as a flexible body with 'real' torsional and bending properties. This approach does not take into consideration the almost negligible deformation of the wheels. Once frequency-response-modes have been defined, the forces acting on the wheels, the mounts and the brakes can all be calculated. An example model can be found on the SIMPACK website. Another approach, which requires more modelling input however, is to model the wheelset and wheels as completely elastic bodies. The bodies can be generated in a FE program and then imported into SIMPACK.



Wheelset with elastic axle

NEW FORCE ELEMENT FOR MODELLING ELASTIC BALLAST

Up until now, the standard force element type 5, was used automatically for the modelling of elastic ballast (i.e. the stiffness of the track foundation). This force element is limited in that it only allows a constant value for the stiffness and damping along the entire length of the rail. With the new force element, it is possible to define the stiffness and damping of the rails as a sinusoidal function with distance along the track, replicating the sleeper frequency. The stiffness and damping can also be calculated from input functions, used typically for simulating switches or defects in the ballast, which can occur when the ballast is insufficiently supported. The element also calculates the nominal forces correctly when located under the rail top edge and, as well as providing the spring properties in the vertical and transverse directions, also takes into account the rotational properties about the longitudinal axis. The rotational properties are particularly important when modelling with rail pads, due to the varying rail torsional stiffness.

NEW WEBSITE CONCERNING SIMPACK ENGINEERING SERVICE

From the middle of December INTEC will have a new website online: www.simpack-engineering-service.com; this will be in addition to the already existing www.simpack.com. The new website relates specifically to the SIMPACK engineering and consulting services offered by third-party companies, along with INTEC itself. You will be able to find out about the services on offer from a search function to help you find a particular field or engineering service. You will also be free to contact the engineering service provider directly from the website, who can provide you with information on the services offered.