

LATEST NEWS



Francois Barral, INTECs Sales Representative in France, at the SIFER 2005 in Paris

INTEC GMBH EXPANDS TO FRANCE

France, alongside Germany and England, is one of the most important European markets in the world of multi-body simulation. The French market is considered to be very diverse, comprising of the rail industry, and the automotive and engine manufacturers, as well as excellent engineering schools and universities. The promising market was the reason for INTEC GmbH to establish a sales representative.

INTEC GmbH formed a joint venture with Francois Barral Consulting, located in the centre of Lyon 9, Rue Elie Rochette; 69007 Lyon; Tel. +33 (0) 478 724 551 or +33 (0) 673 889 65.

Francois started his career as a simulation engineer at Imagine S.A. in France. In 2003 he founded his own company in the field of CAE engineering, where he manages and supports projects in the field of vehicle dynamics and engine simulation. Since February this year, Francois has been the sales representative responsible for SIMPACK in France.

The founding of this joint venture has given INTEC more international presence within Europe and provides the French customers a contact at home, who is available to answer any queries or to discuss any customer requirements.

CURVE-CURVE CONTACT MODEL FOR ODE INTEGRATORS

The SIMPACK Line/Line 2D contact, modelled by the moved marker of type 96, has been improved. As an alternative to the handling of the marker states as algebraic q-states (which are solved by the integrator and require a DAE integrator), the marker states can now optionally be solved with an internal non-linear equation solver, eliminating the need for a DAE integrator.

This is a particularly useful feature when the use of a fixed step size ODE integrator such as the explicit Euler is required, e.g. for realtime simulations. Another typical use is when the model is best solved with an ODE

integrator, (typically for performance gains) but has moved markers of type 96 and therefore required, up until now, the use of a DAE integrator such as SIMPACK's SODASRT.

CODE EXPORT: NEW SOLVER MODES SUPPORTED

The SIMPACK Code Export Solver has been expanded to support a set of new solver modes:

- computation of consistent states on position, velocity and acceleration level for enabling the calculation of a consistent state after parameter changes before an integration is started
- driven equilibrium / steady state analysis for performing steady state (equilibrium) analyses of the exported model
- user enforced re-initialisation of the integrator giving the user more control over the integration
- state reset during a re-initialisation of the integrator allowing model changes (e.g. for setting new state values) during an integration
- computation and write to file of the exported model Jacobian matrix for performing sensitivity analyses

The SIMPACK Code Export solver, enhanced by these new modes, further broadens the applications for the SIMPACK Code Export module.

INTEC GMBH CONGRATULATES DR. TOBOLÁR ON HIS DOCTORAL EXAMINATION

On the 24th of February this year Jakub Tobolár successfully passed his doctoral exam at the Faculty of Mechanical Engineering at the University of Prague.

The PhD thesis presents innovative methods for a process – safe reduction of complex models for real-time simulation. The main focus is the reduction in complexity of vehicle suspension systems, which usually build kinematically closed loops, described in algebraic equations. However, for real-time simulations, the model should avoid algebraic equations and only be described in ordinary differential equations which can be solved efficiently.

Besides the table look-up approach, which has been already implemented in SIMPACK, a new generic suspension model, based on W. Rulkas Macro-Joint formulation is proposed. This model works with natural coordinates, which enables very simple model reduction of all vehicle suspensions used today.

The comparison of the developed method with the other methods implemented in SIMPACK has proven the usability of the generic suspension for real-time vehicle modelling, regarding both accuracy and numeric efficiency as well.

Dr. Jakub Tobolár remains true to the topic vehicle system dynamics at the German Aerospace Center in the Helmholtz-Association Institute of Robotics and Mechatronics.

NEW SIMDOC BROWSER

The SIMPACK documentation, SIMDOC, is now offered with a new indexing system and full-text search engine, "SIMPACK Assistant". The new search features are incorporated into a single browser, which is in the style of the customary Windows help format. The index automatically springs to the respective linked index entries as you type. The full-text search engine allows you to enter text, and all

occurrences in SIMDOC will be shown as an active link. These two new features are designed to help you find the required help topics more quickly and easily.

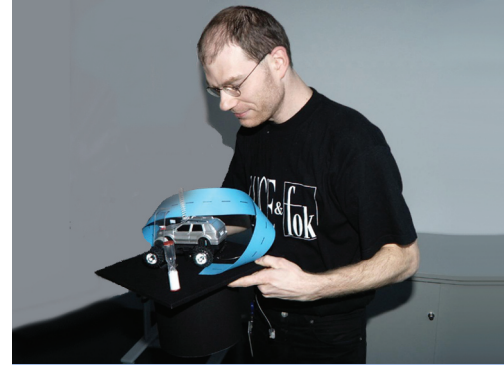
SIMPACK ACADEMY 'WIND TURBINE DYNAMICS AND DESIGN' AT LAKE STARNBERG

On the 28th and 29th June 2005 the SIMPACK Academy course 'Wind Turbine Dynamics and Design' took place for the first time.

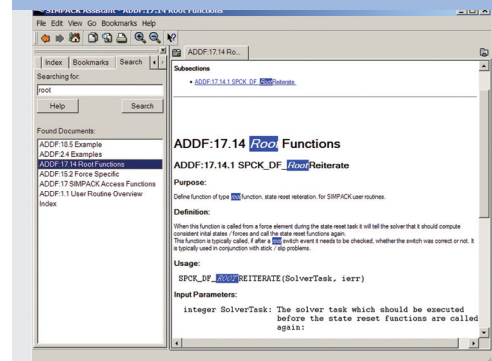
Professor Dr. Dipl.-Ing. Martin Kühn from Stuttgart University, Endowed Chair of Wind Energy, gave an insight into the wind turbine dynamics and design. Despite the outstanding seminar location and the excellent weather, the participants were absorbed by the material Professor Kühn presented which was made even more enjoyable by his captivating style.

Professor Kühn gave six lectures on the following topics: 'Wind Characteristics and Wind Field Modelling', 'Aero-Mechanical Energy Conversion', 'Basic Design Concepts of Wind Turbines', 'System Dynamics, Simulation and Measurements', 'Product Development Process and Design Calculation' and 'Dynamics and Design of Offshore Wind Turbines'.

Professor Kühn combined his lecture with his recent industrial experience which made it even more interesting.



Dr. Jakob Tobolár with his doctoral hat



New SIMDOC Browser



Prof. Kühn at the SIMPACK Academy Wind Turbine Dynamics and Design in the Hotel La Villa at Lake Starnberg