



FTire (Flexible Ring Tire Model) is a full 3D nonlinear in-plane and out-of-plane tire simulation model.

FTire is used by engineers in the vehicle and tire industry worldwide. Highly sophisticated 2D and 3D road surface evaluation methods and a powerful toolbox for tire and road data processing make *FTire* the most comprehensive software package for tire dynamics simulation in the market.

FTire is designed for vehicle comfort simulations and prediction of road loads on road irregularities even with extremely short wave-lengths. It can also be used as a structural dynamics based, highly nonlinear and dynamic tire model for handling characteristics without limitations or modification to input parameters.

FTire explains most of the complex tire phenomena on a mechanical basis, and so is much more than a mathematical approximation of measured force characteristics.

***FTire* key features**

- ▶ Structural dynamics based, full 3D nonlinear in-plane and out-of-plane tire model for simulation of belt dynamics, local pressure distribution in the contact patch, rolling resistance, side-wall contact, large camber angles and misuse scenarios.
- ▶ Suitable for a frequency range up to 200Hz, excited by short surface wavelength, mass imbalance, non-uniformity or irregular tread patterns.
- ▶ Very fast and flexible. Orders of magnitude faster than explicit FE models.
- ▶ Simulation of imbalances by inhomogeneous mass distribution and local wear.
- ▶ Belt temperature distribution model.
- ▶ Support for user-defined wear and temperature distribution models.
- ▶ Full integration of *cosin/road* digital road library with support for complex rigid time-invariant and time-variant road surfaces.
- ▶ Full integration of *cosin/soil* digital road library with support for flexible and deformable road surfaces.
- ▶ Advanced online animation with belt deformation animation, pressure distribution plots, road surface visualization and movie export.
- ▶ Robust, multi-core system enabled solver engine.
- ▶ Parameter editing and validation tools included.
- ▶ Tailored parameter fitting tool (*FTire/fit*) available.
- ▶ Good correlation to measurements.

Interfaces

- ▶ Plug-in for all major MBS simulation packages
- ▶ Matlab/SIMULINK blockset
- ▶ Easy integration with customer-specific vehicle dynamics software by the *cosin tire interface* (CTI) C/C++/Fortran API.

Platforms

- ▶ Windows (XP and later)
- ▶ Linux (RHEL4, RHEL5, SLED11)
- ▶ Mac OS X (10.6)

All platforms are supported for 32bit and 64bit operating systems.

cosin
scientific software

Gipser + Hofmann,
Ingenieure, Partnerschaft
Agnes-Pockels-Bogen 1
80992 Munich
Germany

Tel.: +49-(0)89-55298860
Fax: +49-(0)89-55298862

info@cosin.eu

www.cosin.eu