

VEHICLE TIRE SIMULATION MODELLING

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ABSTRACT –
Tires are one of the most critical components of a vehicle. In the last years FEA - simulations take increasingly active part to the Tires development, and they are used in combination with the experimental tests for the efficient Tire construction. With the evolution of the FEA simulations, the companies can simulate all possible scenarios that a Tire will have to deal with, during its lifetime.

In the FEA simulations the tires are tested in 2D and 3D cases.

BETA CAE Systems provides a complete solution where the user can import the Tire geometry; create the surface and volume mesh according to specific parameters and finally set-up the boundary conditions for each possible scenario.

The main test cases in the FEA field are:

- tire inflation
- patch pressure
- curb strike
- Several scenarios that require Multiphysics analysis, like aqua-planning.

After the continuous recent development in ANSA, for the support of the required Abaqus Tire Modelling keywords, provides the ability to set-up several kind of Tire simulations through the BETA suite.
