



MXmountdesigner



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MXmountdesigner的目标

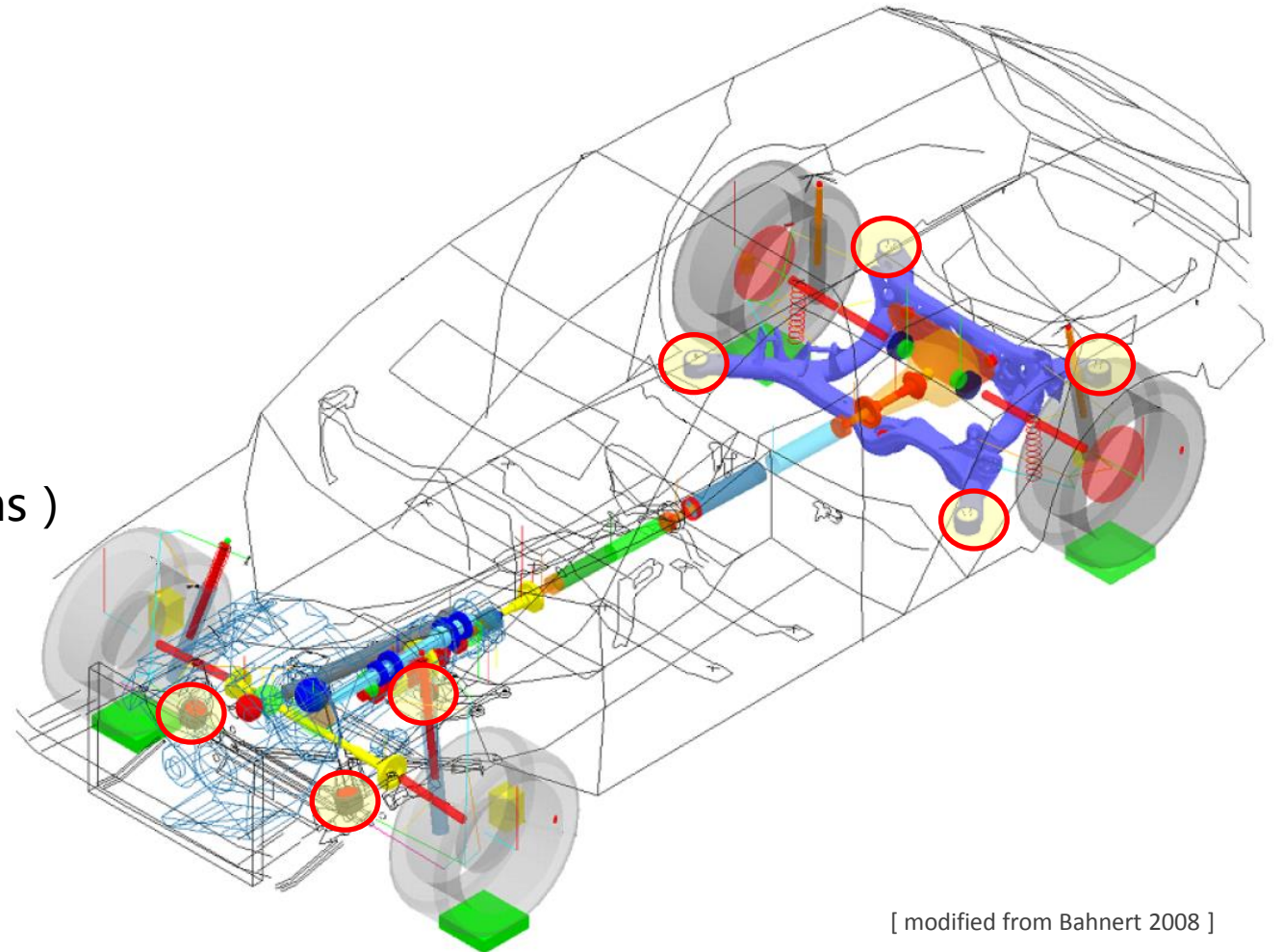
驾乘舒适性和车辆操控模拟
刚体的多体模拟

已开发的用于安装座和衬套的模型 (Matlab / Simulink) :

- 弹性体
- 液压体

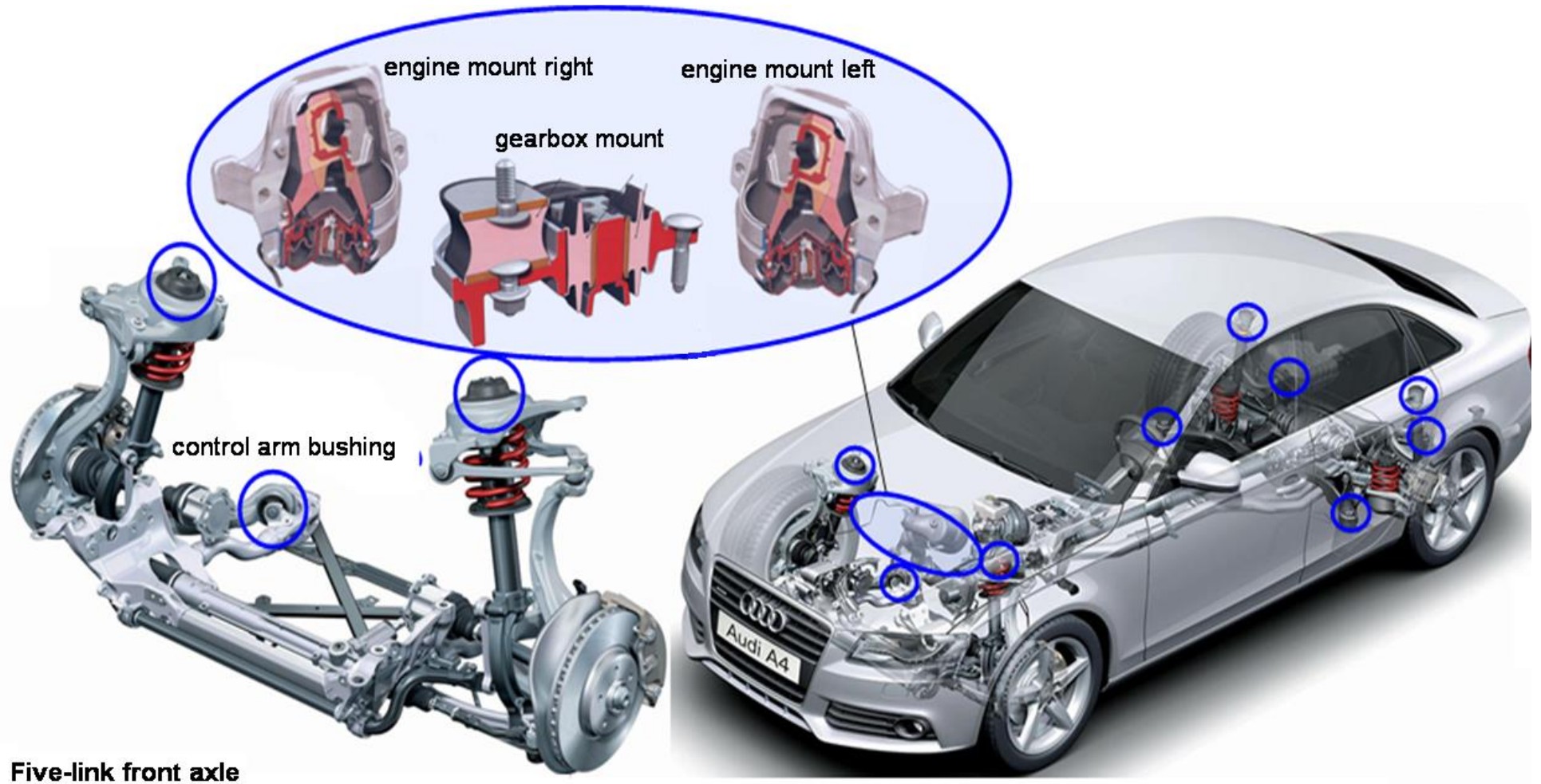
在整体车辆仿真中实施 (MSC.Adams)

**MXmountdesigner 自动识别
相关参数并为MSC.Adams生成
属性文件。**



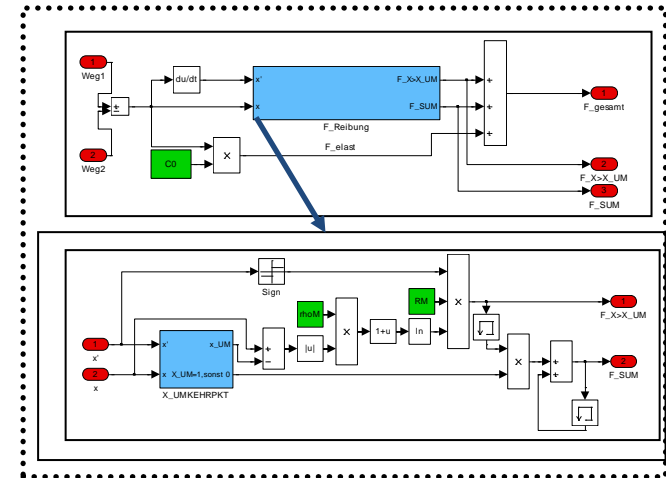
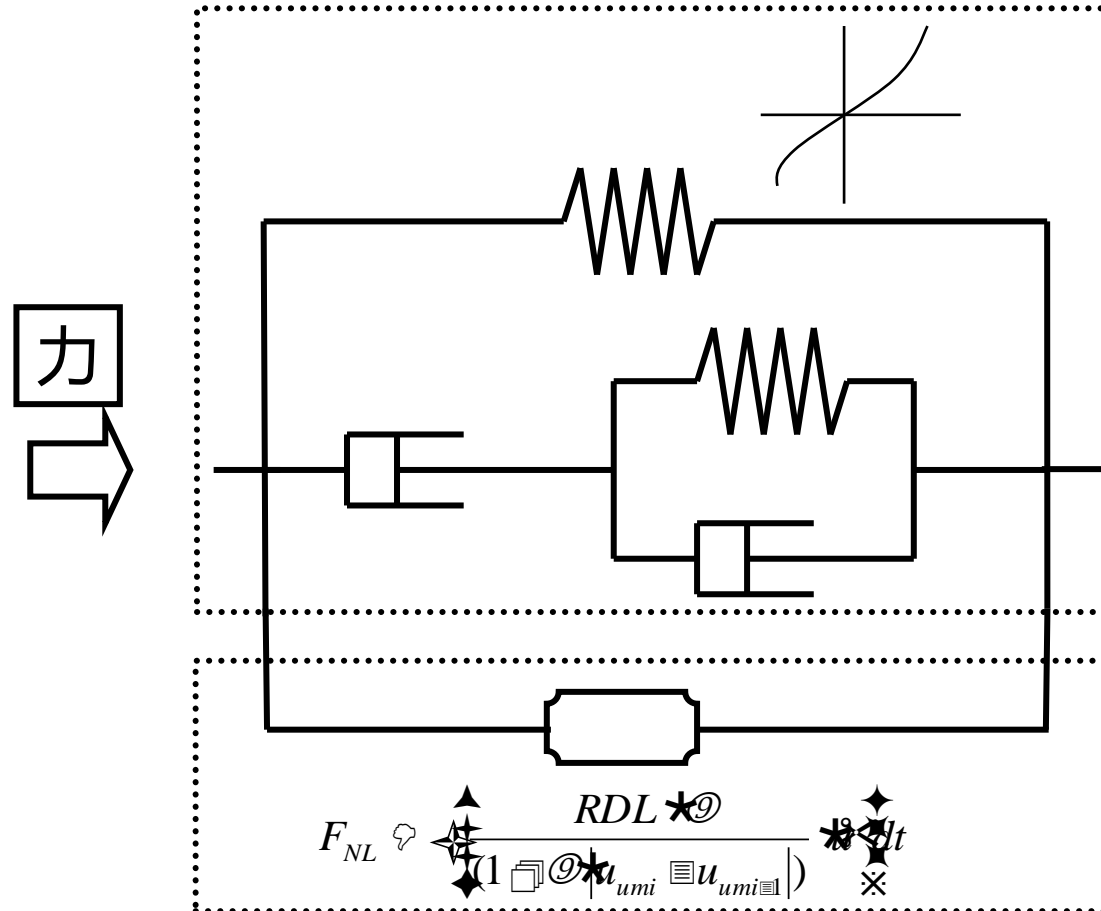
[modified from Bahnert 2008]

弹性底座和液压底座类型



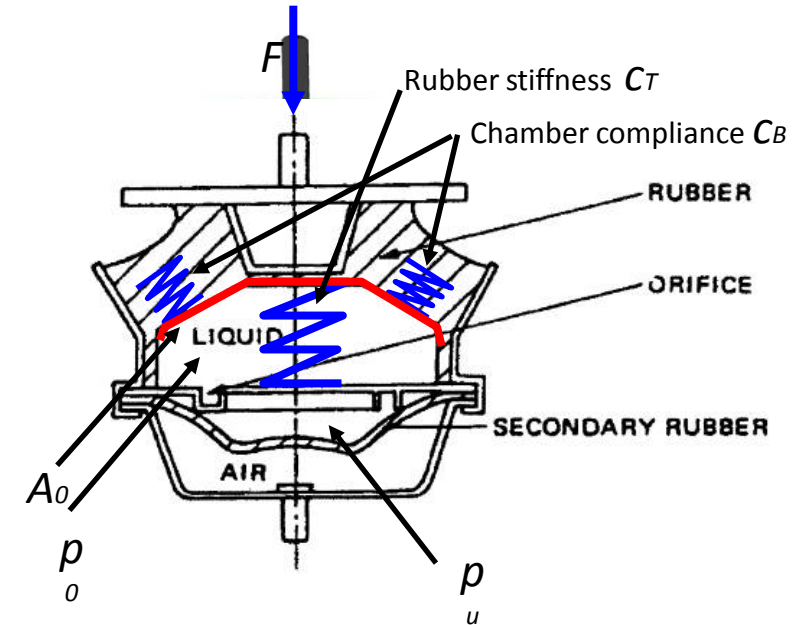
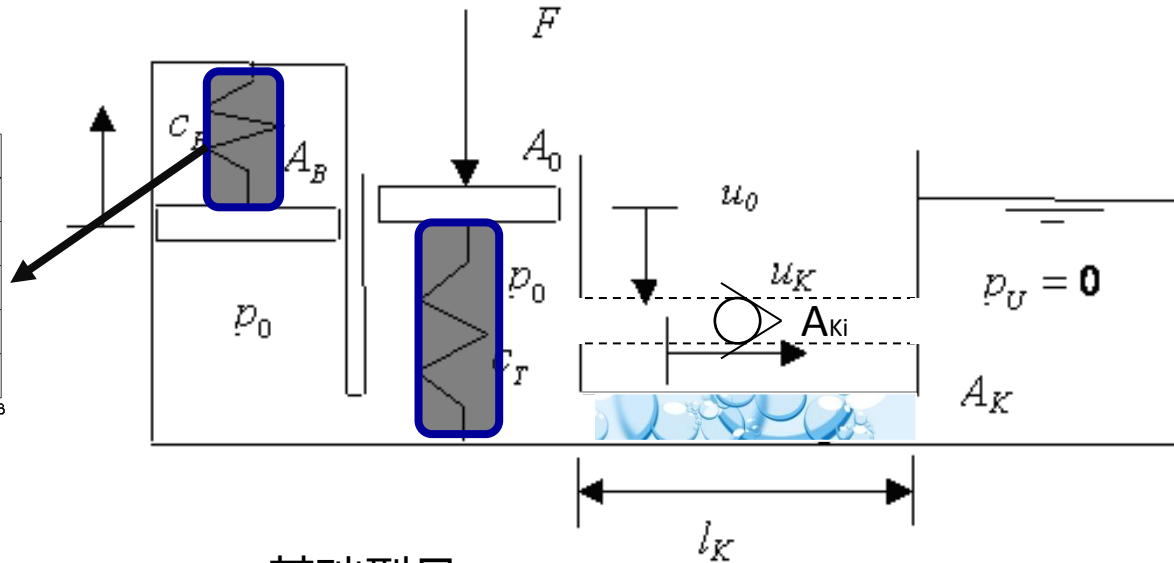
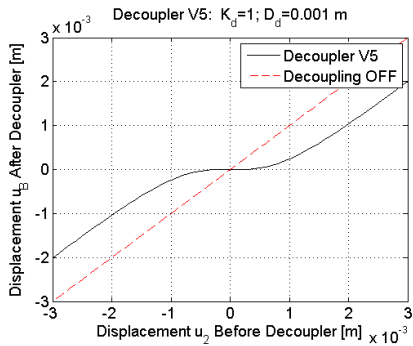
Five-link front axle

弹性底座模型结构



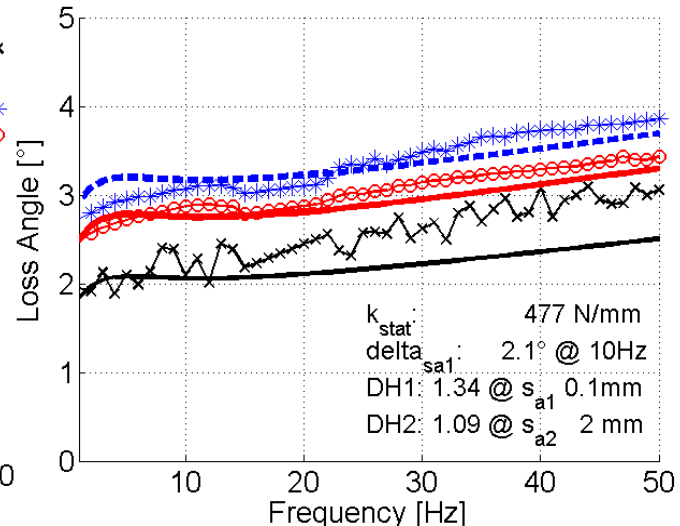
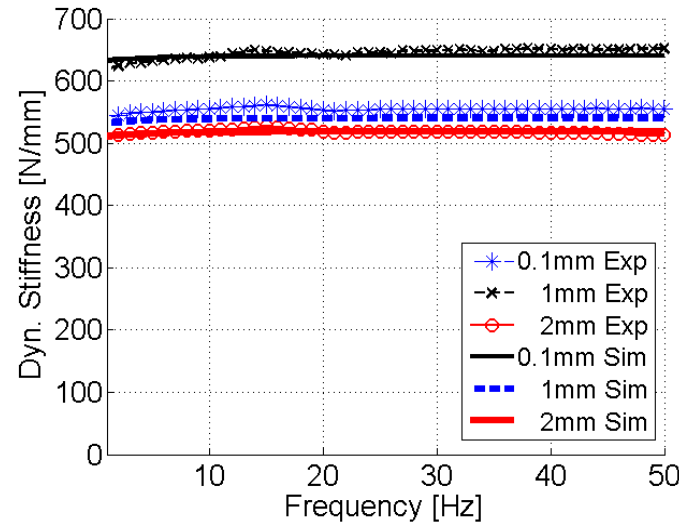
线性模块
 频率依赖性
非线性模块
 幅度依赖性
 力的对数增加

液压底座模型结构

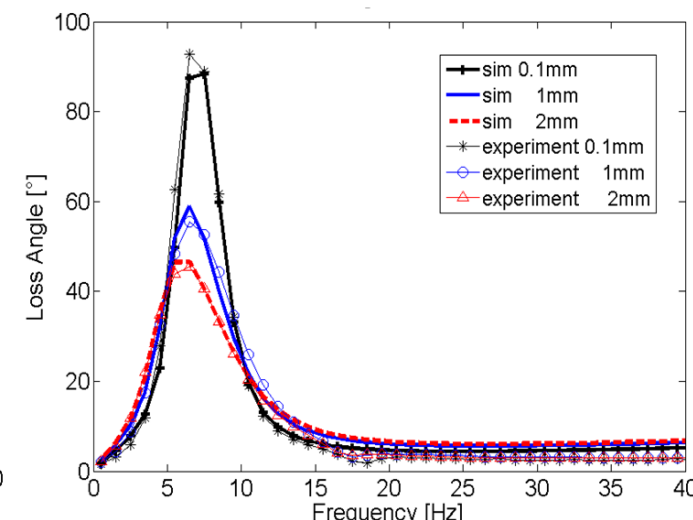
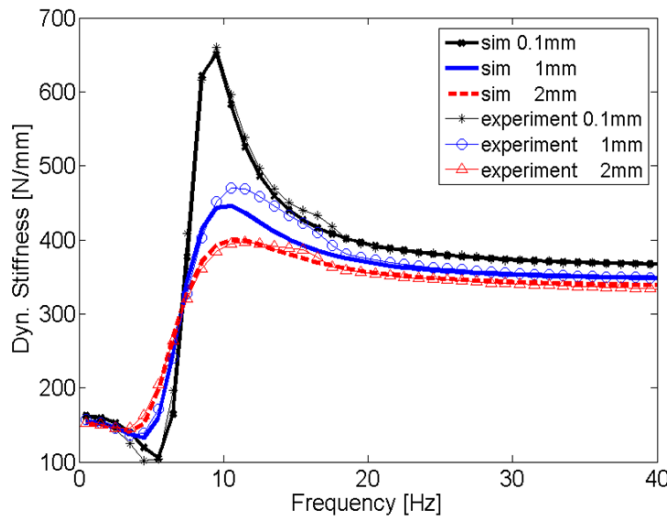


- 基础型号
- 具有物理意义的模型参数
 - 橡胶刚度 c_T ; 腔室柔软度 c_B ;
- 通道长度 l_k ; 通道的横截面积 A_k
- 弹簧代表弹性体模型 G4E
- 空化 (压力阈值)
- 有去耦 (去耦膜/完全去耦安装座)
- 旁通阀 (悬架衬套)

MXmountdesigner识别的弹性底座的参数



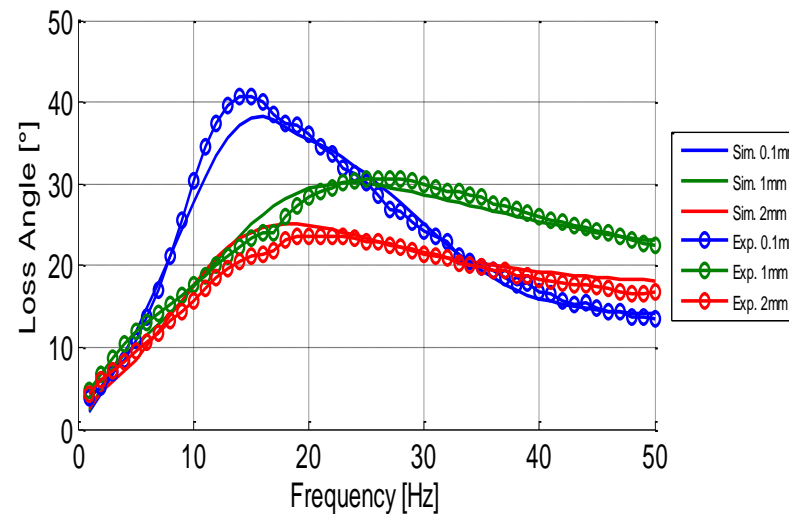
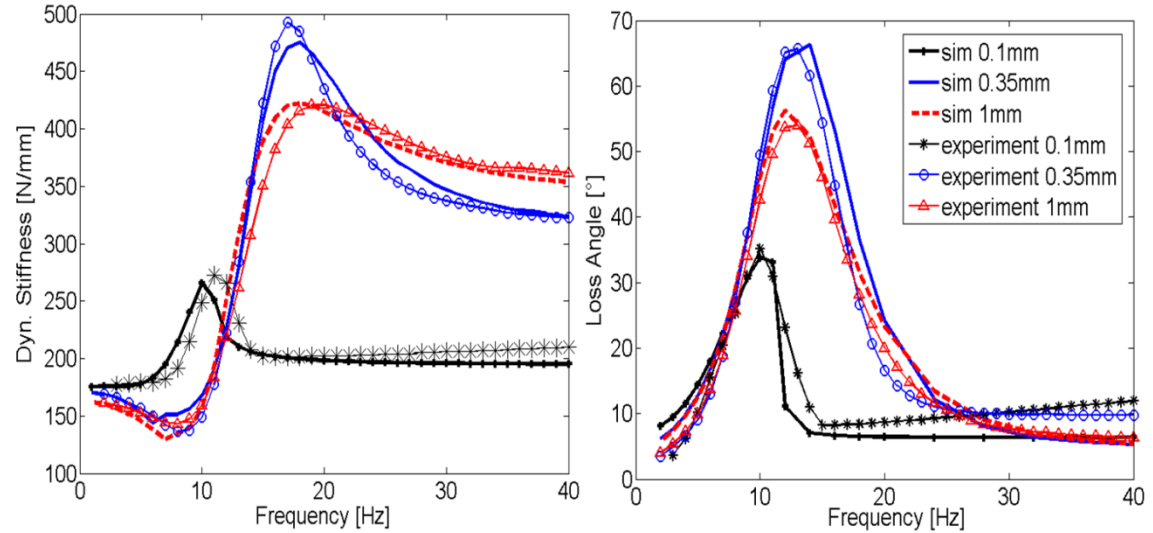
MXmountdesigner识别的液压底座的参数



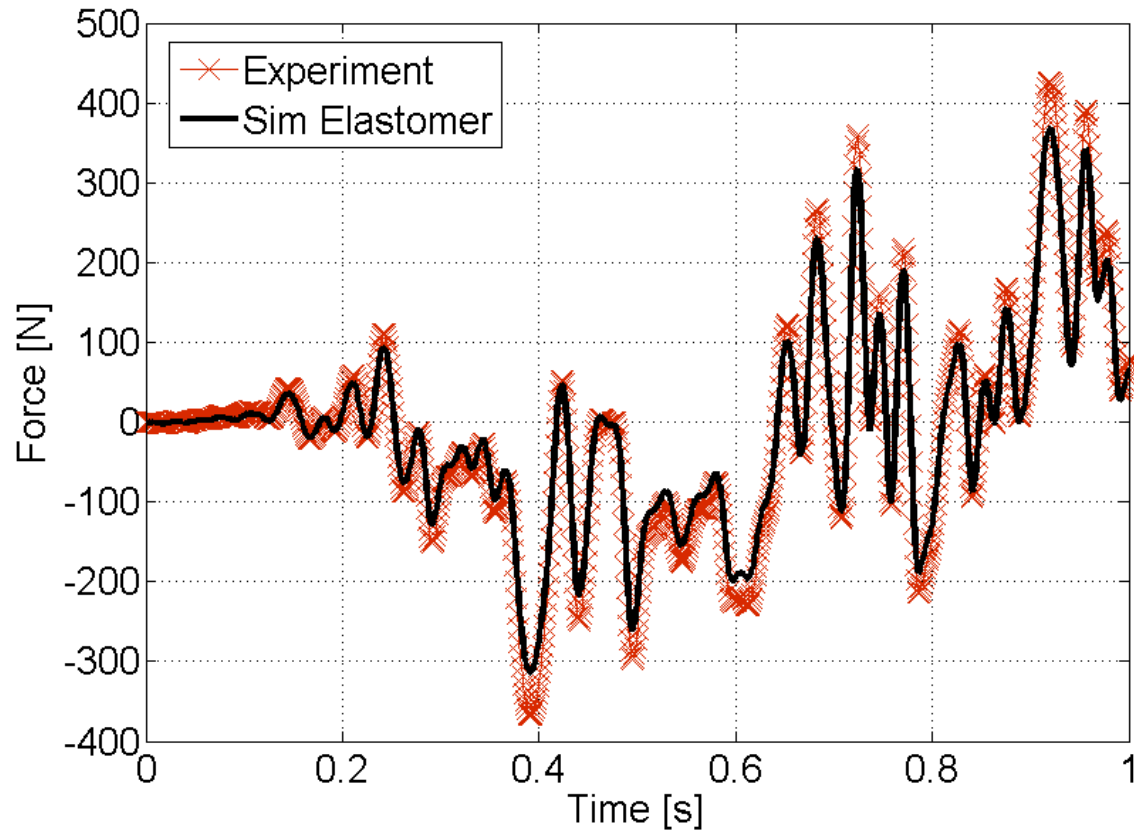
完全解耦的被动发动机底座

MXmountdesigner识别的液压底座的参数

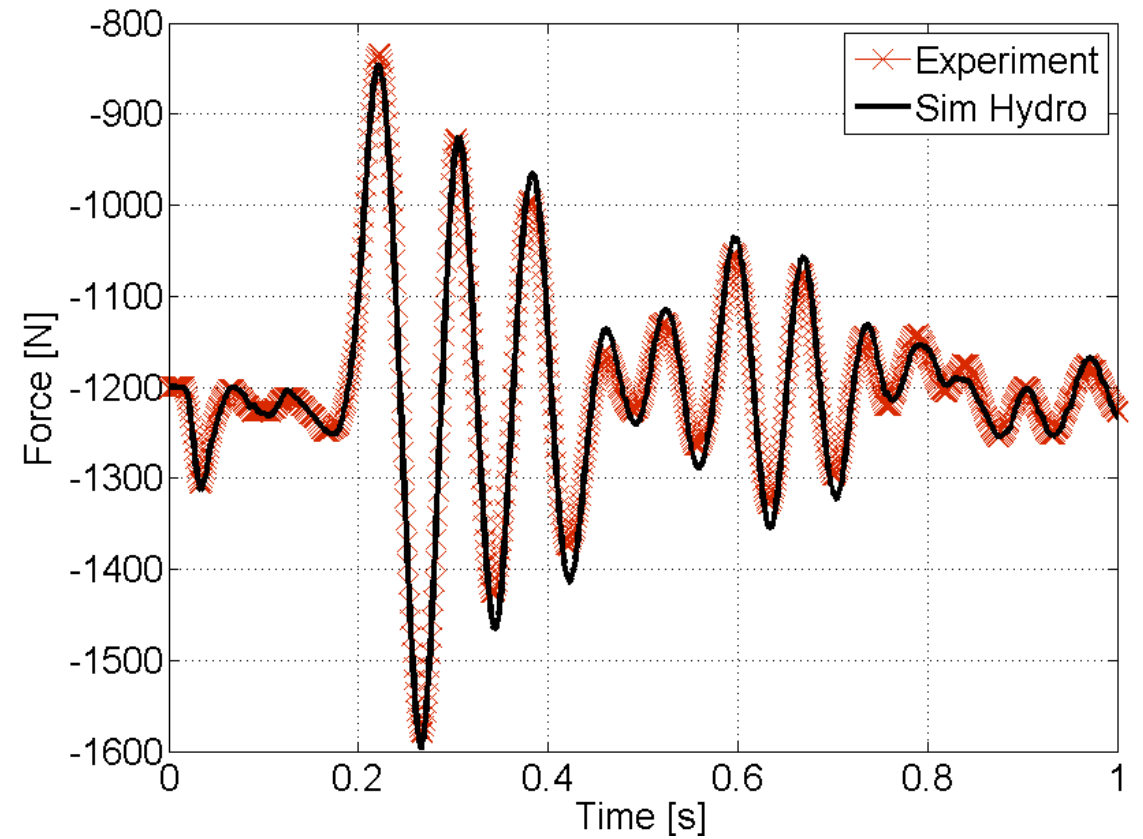
悬架衬套



弹性底座



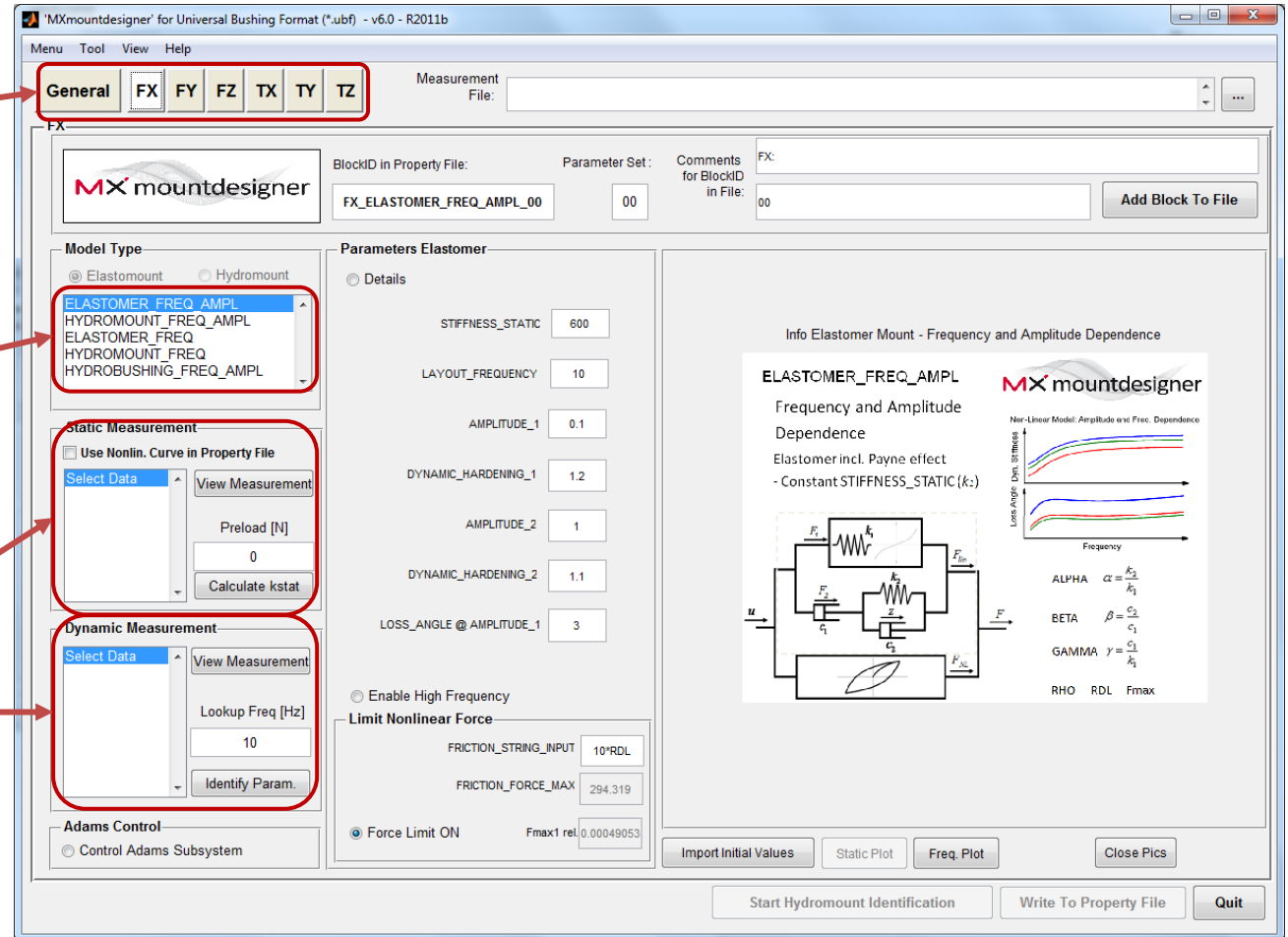
液压底座

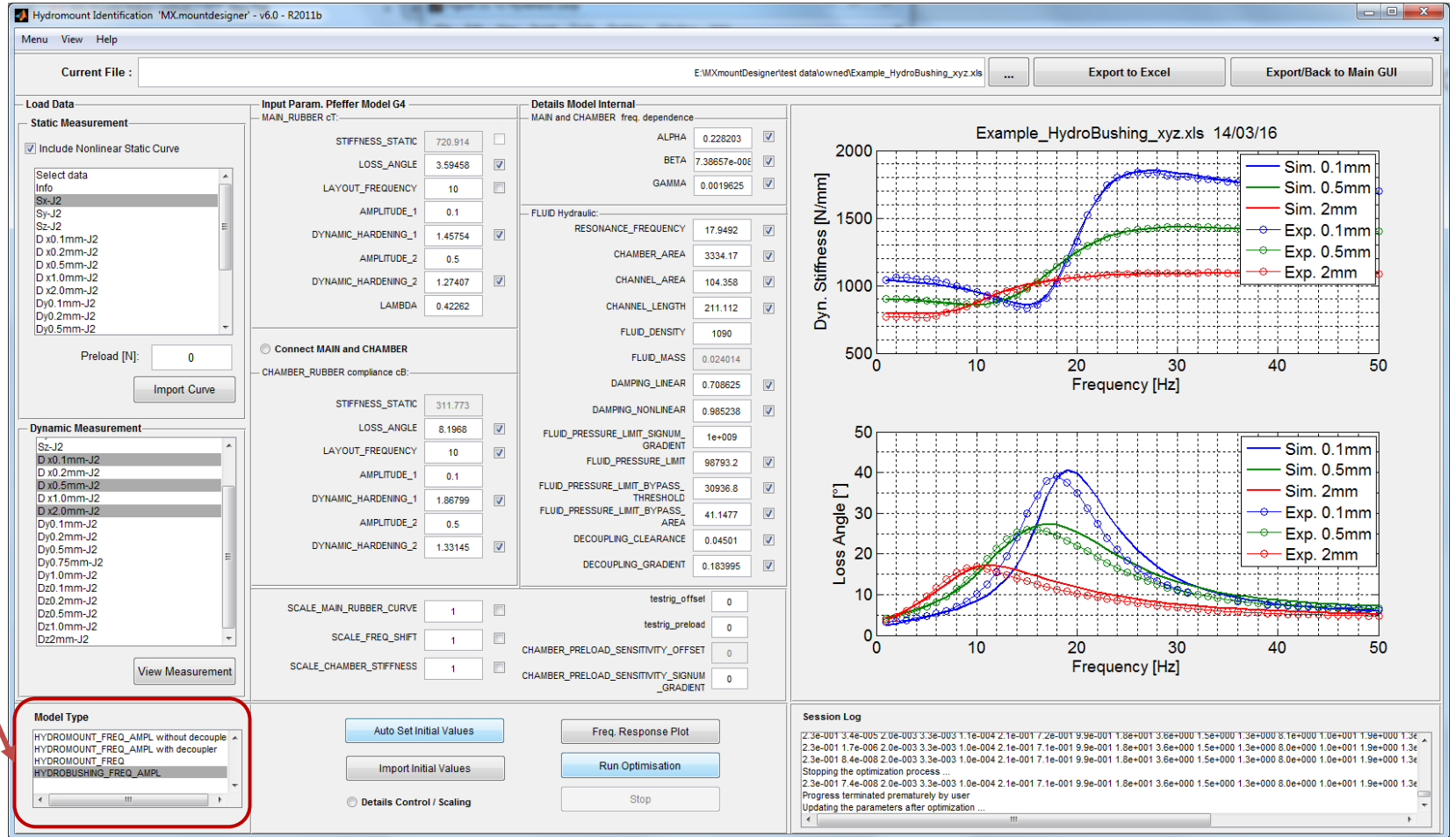


六个方向可以耦合或独立

衬套模型类型：线性或非
线性弹性体和液压底座

两次点击即可适应弹性底
座的静态和动态测量





The screenshot shows the 'Hydromount Identification' software interface. The 'Model Type' dropdown is highlighted with a red box and contains the following options:

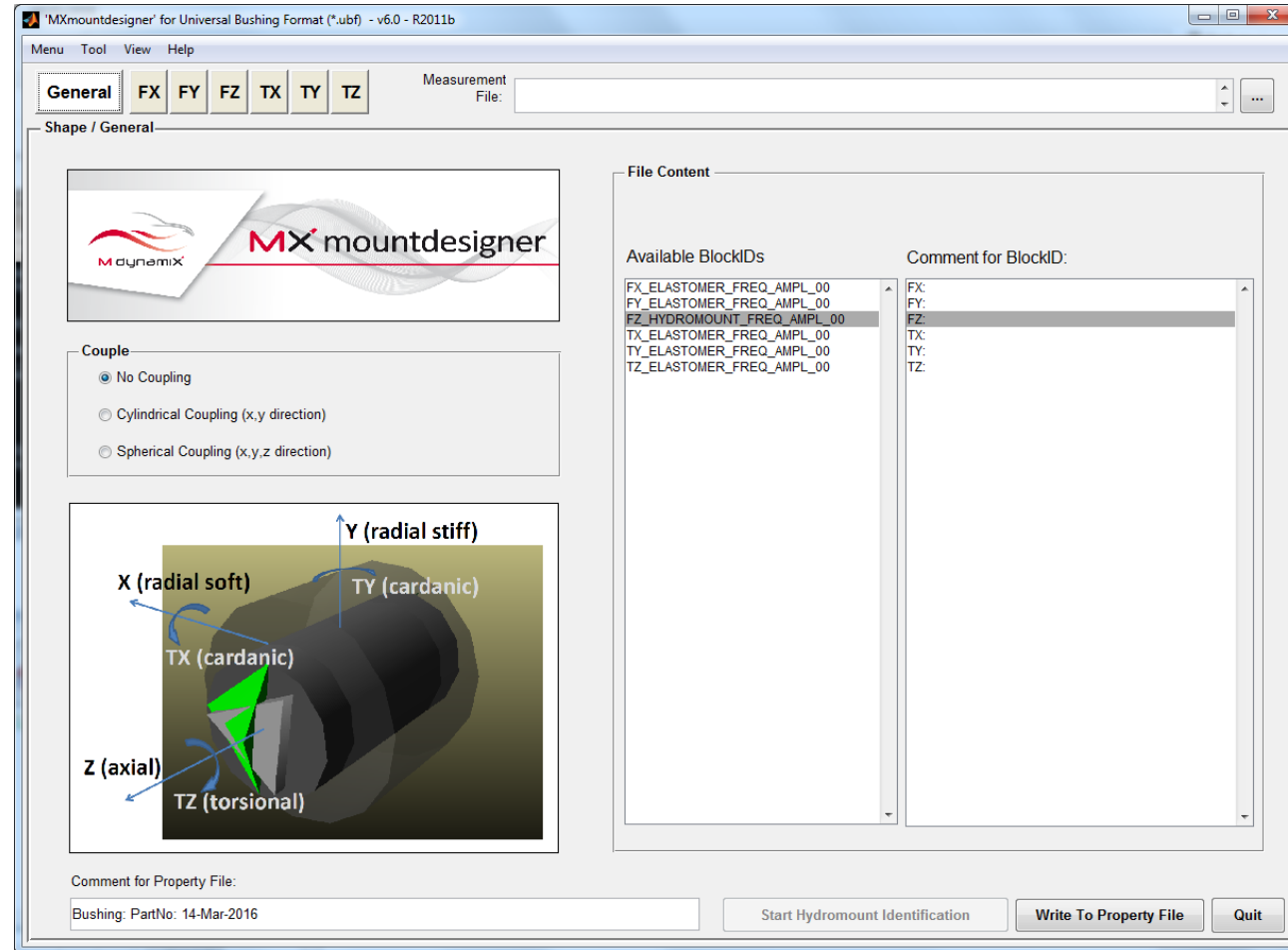
- HYDROMOUNT_FREQ_AMPL without decoupler
- HYDROMOUNT_FREQ
- HYDROBUSHING_FREQ_AMPL

Two graphs are displayed on the right side of the interface:

- Top Graph:** Dynamic Stiffness [N/mm] vs Frequency [Hz]. The y-axis ranges from 500 to 2000, and the x-axis ranges from 0 to 50. It shows simulation results for 0.1mm, 0.5mm, and 2mm gaps, along with experimental data points for the same gaps.
- Bottom Graph:** Loss Angle [°] vs Frequency [Hz]. The y-axis ranges from 0 to 50, and the x-axis ranges from 0 to 50. It shows simulation results for 0.1mm, 0.5mm, and 2mm gaps, along with experimental data points for the same gaps.

四种类型的液压模型：线性或非线性的液压底座、液压衬套

生成具有不同方向模型的
组合的属性文件

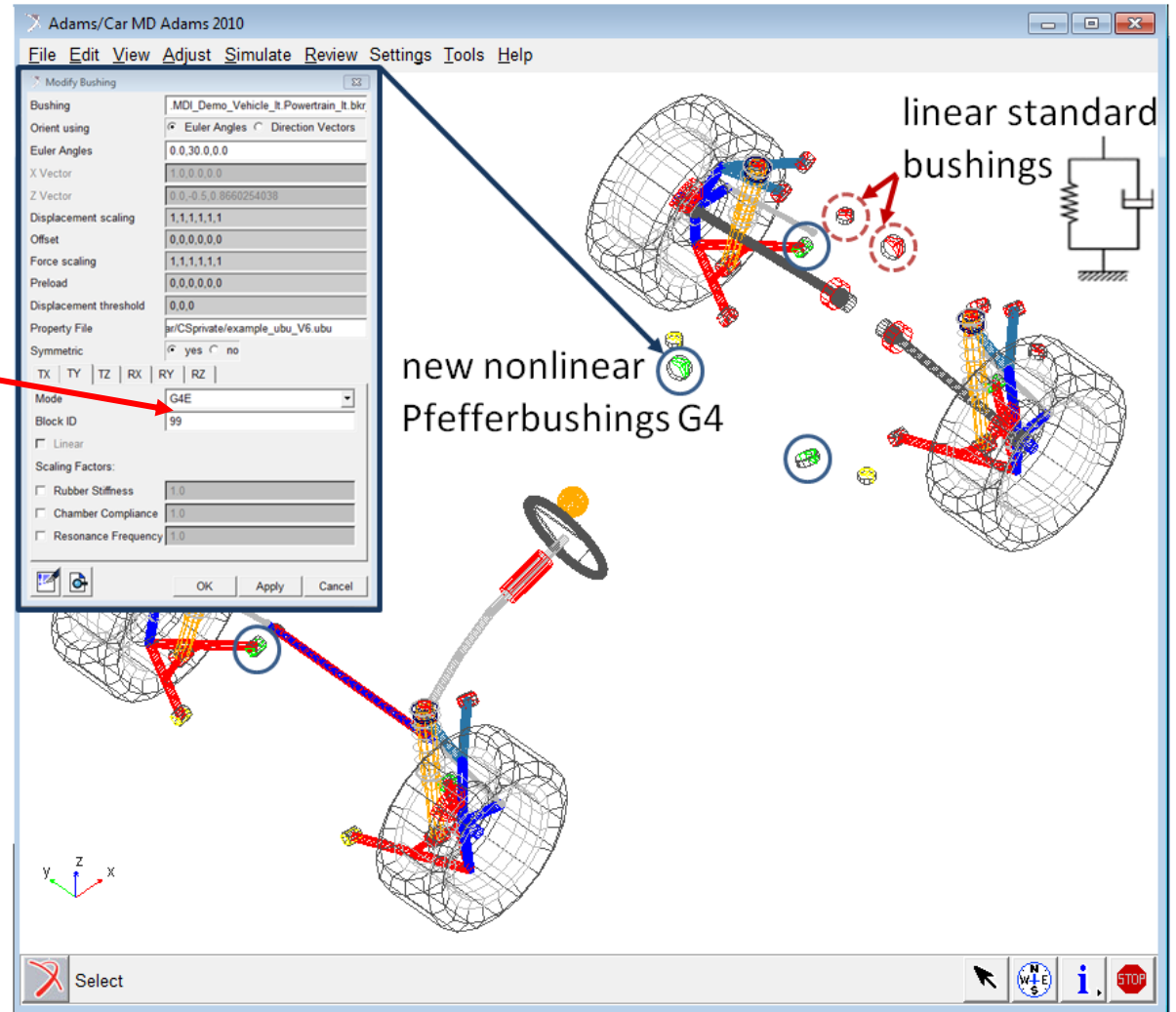


In Combination with Multi-body Simulation - ADAMS

```

1 $-----MDI_HEADER
2 [MDI_HEADER]
3 FILE_TYPE = 'ubf'
4 FILE_VERSION = 1.0
5 IDENTIFICATION_TOOL_VERSION = 'v5.41'
6 (COMMENT_line)
7 'ToolVersion:v5.41 - 28-July-2014'
8 $-----UNITS
9 [UNITS]
10 LENGTH = 'm'
11 ANGLE = 'rad'
12 FORCE = 'newton'
13 MASS = 'kg'
14 TIME = 'second'
15 $-----GENERAL
16 [GENERAL]
17 SHAPE = 'none' $ 'none' (no coupling), 'cylindrical' (x,y direction), 'spherical' (x,y,z direction)
18 $
19 $--- Available BlockIDs in File:
20 ${FX} (ELASTOMER_FREQ_AMPL_00) $ G4 Elastomer Mount incl. Amplitude Dependence
21 ${FY} (ELASTOMER_FREQ_AMPL_00) $ G4 Elastomer Mount incl. Amplitude Dependence
22 ${FZ} (ELASTOMER_FREQ_AMPL_00) $ G4 Elastomer Mount incl. Amplitude Dependence
23 ${TX} (ELASTOMER_FREQ_AMPL_00) $ RX DUMMY G2E model; Very Stiff - G2-source: RX_G2E00
24 ${TY} (ELASTOMER_FREQ_AMPL_00) $ RY DUMMY G2E model; Very Stiff - G2-source: RY_G2E00
25 ${TZ} (ELASTOMER_FREQ_AMPL_00) $ RZ DUMMY G2E model; Very Stiff - G2-source: RZ_G2E00
26 $=====FX
27 [FX]
28 $-----ELASTOMER_FREQ_AMPL
29 (ELASTOMER_FREQ_AMPL_00)
30 COMMENT = 'G4 Elastomer Mount incl. Amplitude Dependence:0mm(N)'
31 $COMMENT_USER: 'source:TX_G4E00-C:\Users\Admin\Documents\Orehek-Pfeffer_Transfer\trunk\MXmount\test dat
32 $Excel file:
  
```

Property file generated by MXmountdesigner



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