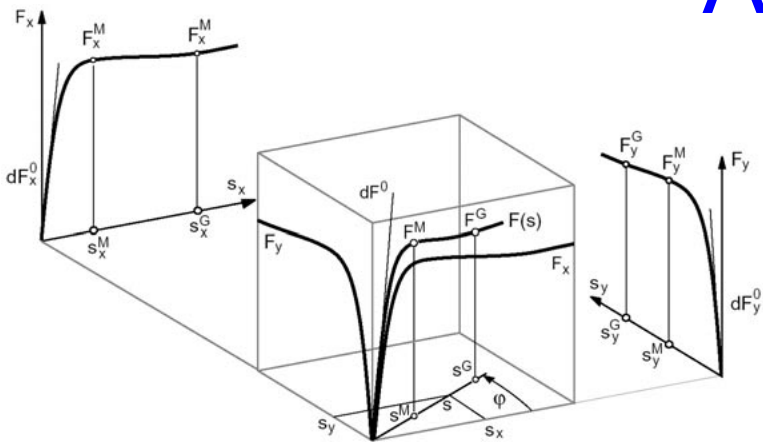


TMeasy – a Tyre Model „Easy to Use“ in SIMPACK: Handling and Applications



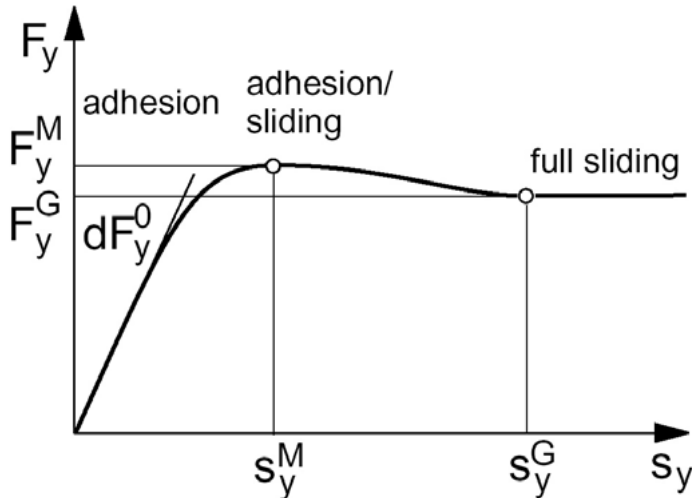
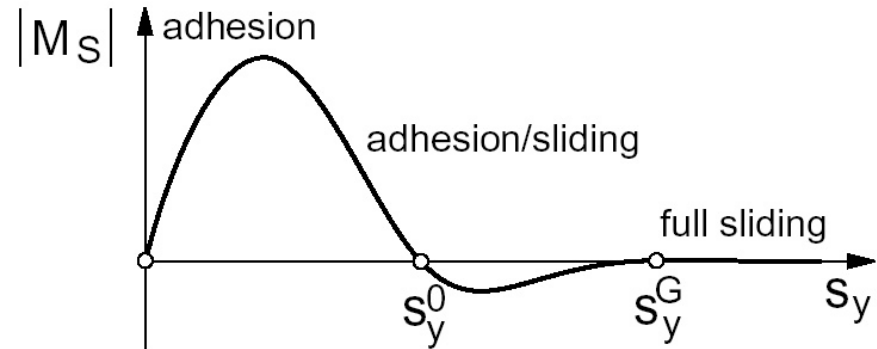
TMeasy

- Theoretical Background
- Characteristics of Forces and Torques
- Generating Parameters
- Implementation
- Validation
- Applications

Theoretical Background

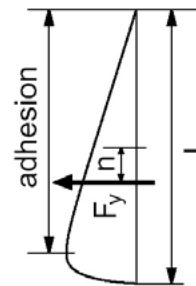
Tyre Characteristics:

- Slip Ranges
- Lateral Force
- Self Aligning Torque



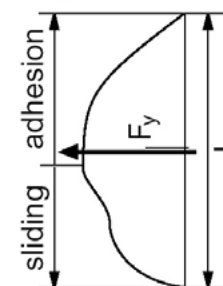
small slip values

$$F_y = k \cdot F_z \cdot s_y$$



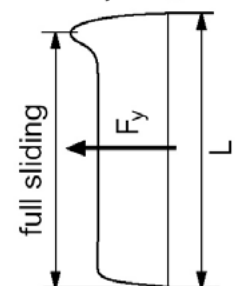
moderate slip values

$$F_y = F_z \cdot f(s_y)$$

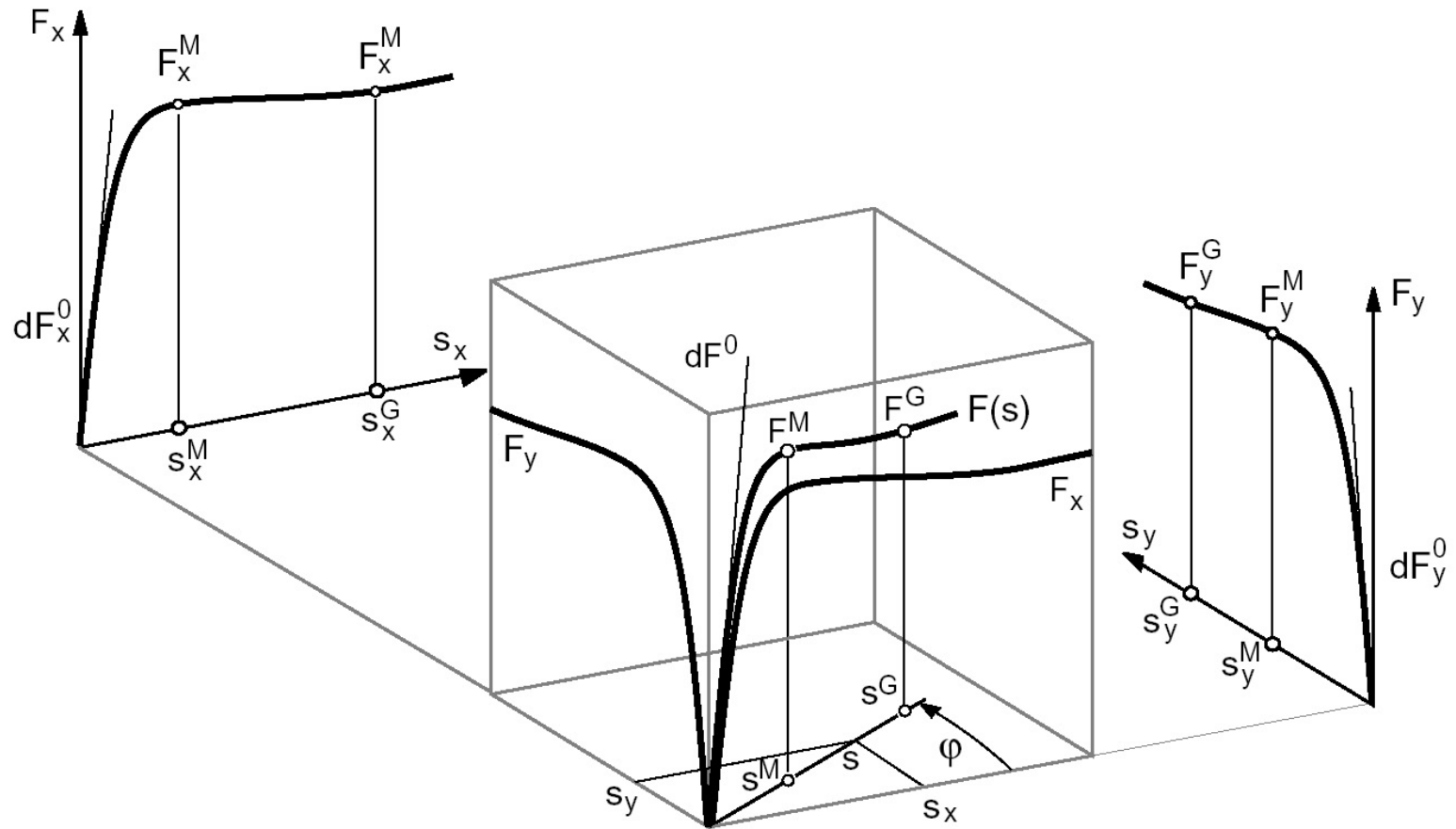


large slip values

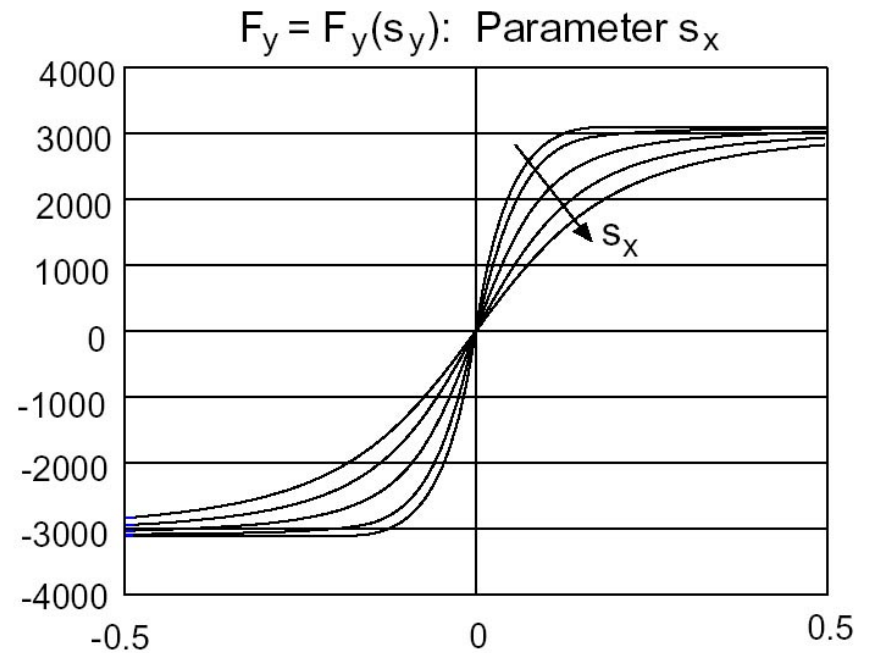
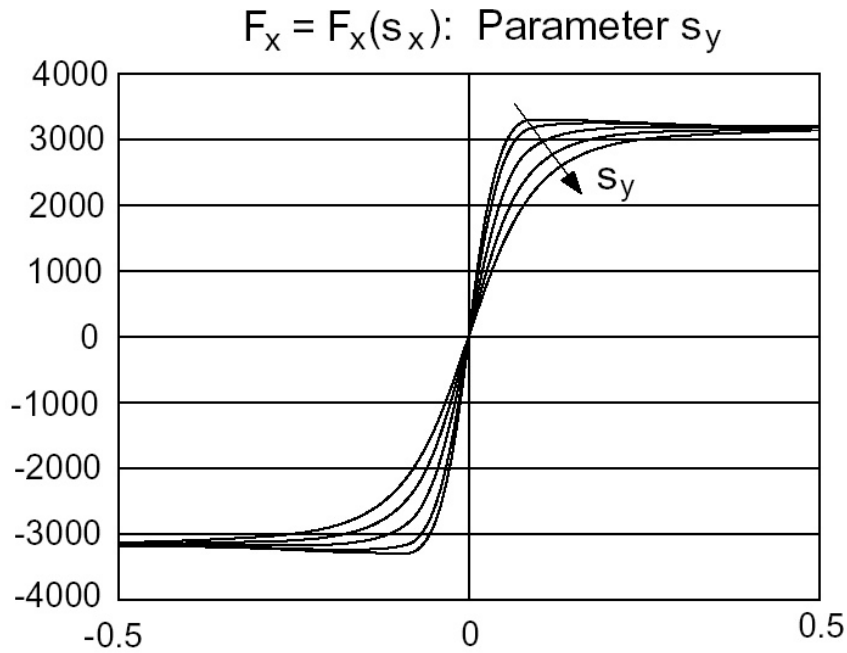
$$F_y = F_G$$



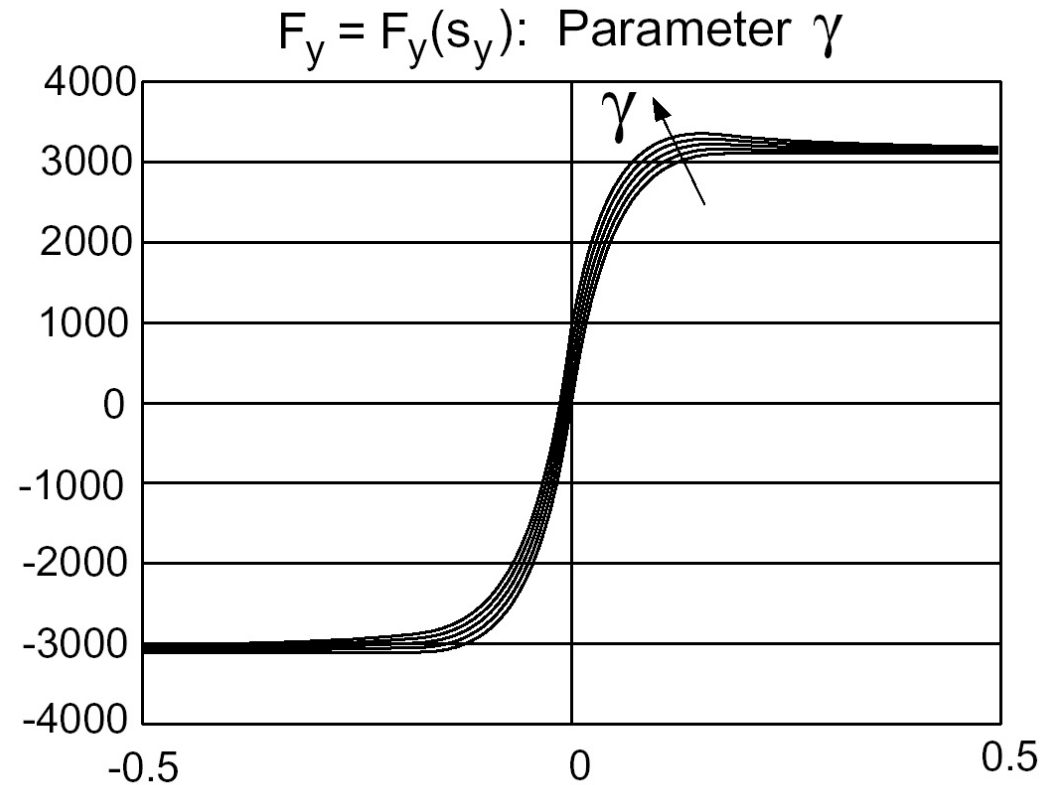
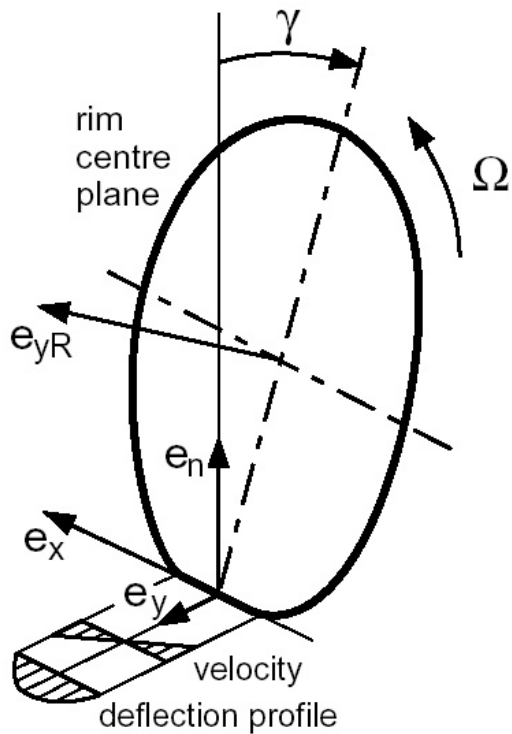
Generalized Tyre Characteristics



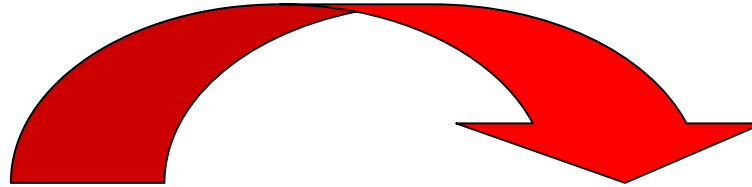
Typical Characteristics: s_x , s_y



Typical Characteristics: Chamber



Handling: Generating Parameters



Lateral Force F_y	
$F_z = 3.2 \text{ kN}$	$F_z = 6.4 \text{ kN}$
$dF_y^0 = 70 \text{ kN}$	$dF_y^0 = 100 \text{ kN}$
$s_y^M = 0.180$	$s_y^M = 0.200$
$F_y^M = 3.10 \text{ kN}$	$F_y^M = 5.40 \text{ kN}$
$s_y^G = 0.600$	$s_y^G = 0.800$
$F_y^G = 3.10 \text{ kN}$	$F_y^G = 5.30 \text{ kN}$

