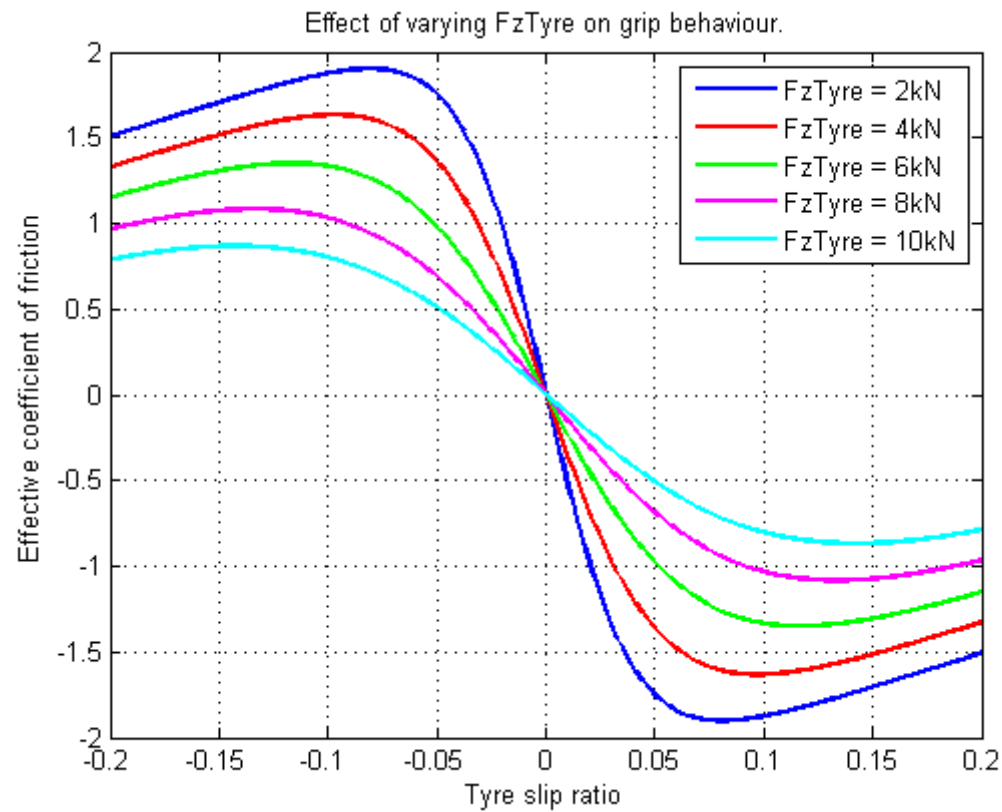


Fz-Mu Degradation

As tyre forces increases so the effective coefficient of friction tends to decrease. The parameter **drMuy_dFzTyre** and **drMux_dFzTyre** control this relationship for lateral and longitudinal slip respectively, via the relationship:

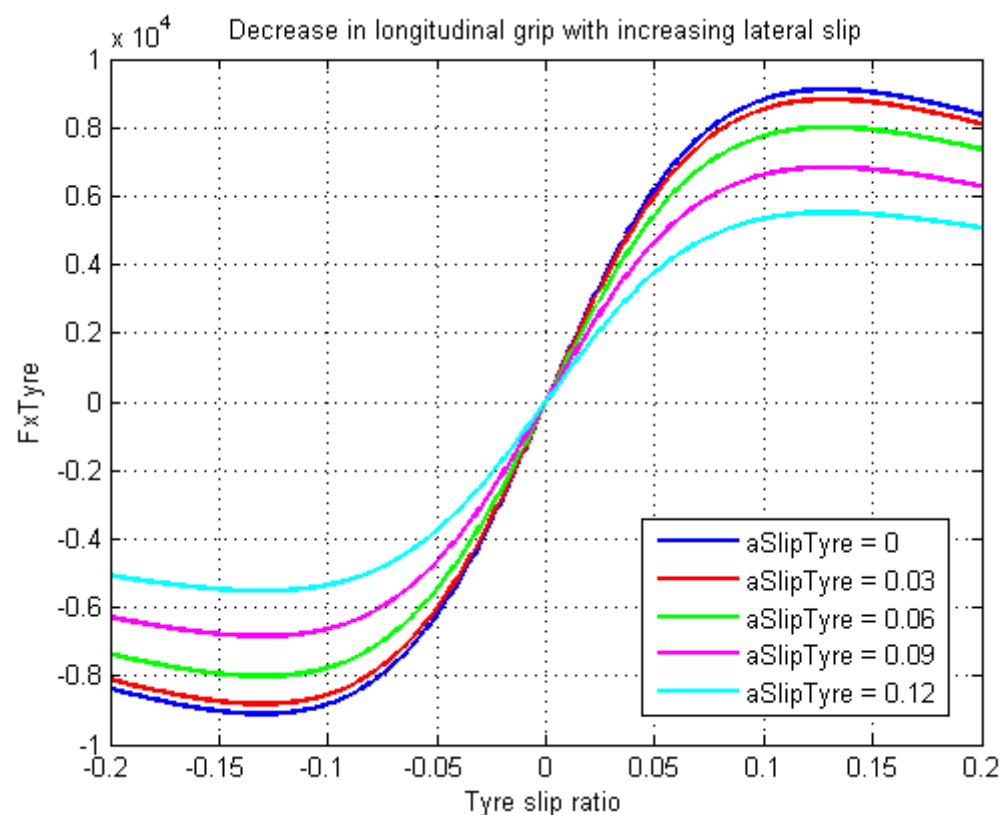
$$\mu = \mu_{\max} e^{\left(\frac{d\mu}{dF_z} \frac{F_z}{\mu_{\max}}\right)}$$

When F_z is zero, therefore, mu degradation will take a value of exactly $\frac{d\mu}{dF_z}$, and this will gradually decrease as F_z increases. The figure below shows the effect non-zero **drMuy_dFzTyre** has on effective grip as FzTyre increases.



Combined Slip

So far this section has examined the effects of lateral and longitudinal slip independently. In reality, however, the tyre cannot simultaneously support high lateral and longitudinal loads; capacity to produce F_x is dependent on the capacity to produce F_y . In the Canopy Tyre Model the two effects are combined using the parameters **rCombinedScalingMin** and **rCombinedSlipShaping**. This gives rise to the classic "tyre ellipse" behaviour.



Camber Effects

