

## check torque for slipping

What do I need:

friction force  $>$  tangential force at the wheel  $\Rightarrow$  slipping

checking tires 3 and 4

calculating the friction force

- need  $\alpha$ , for longitudinal acceleration

- calc.  $\mu_{\text{tire-wheel}}$

- $v_1, v_2, f$

- velocity at beginning and end of segmented tire

- calc.  $t: v_1, v_2, d_{\text{step}}$

- $d_{\text{step}}$  3 step distance

- Finding  $v_1$  and  $v_2$ ,

- set initial tire ass.  $v_1 = 0$

- $v_2 \rightarrow$  calculate velocity wheel

- engine force  $\Rightarrow$  calculate engine force (car, wheel torque, trans. efficiency)

- drag force  $\Rightarrow$  calculate drag force

- car

$\rightarrow$  calc. torque at wheels (gear, torque, car, transmission efficiency)

- gear  $= 1$ , assumption

- tangential force at the wheel:

- set tangent force at wheels

- gear  $= 1$ , assumption

- torque

- car