

Miguel Dorado
Challenge Interim Report
Maximus Tires
1/15/18

- What is the project about? (the definition of the problem)

Maximus Tires (I may patent the name.) will maximize tire performance for car racing. If it ends up working, it maximizes your car's launch without damaging your top speed. A tire with treads during a launch will give you the traction you need to gain speed but the treads will create friction slowing you down at top speeds.

Maximus Tires hopes to overcome this issue by creating a tire that can change the tread shape and size.

- How are you/do you plan to solve this problem computationally?

Maximus tires' staff first thought a using a chemical reaction, but that wouldn't work for a couple reasons. This endothermic reaction would work only one time and does the opposite of what I want to

do.
<https://www.khanacademy.org/test-prep/mcat/chemical-processes/thermochemistry/a/endothemic-vs-exothermic-reactions>

Perhaps, I could use a gas that expands when cold. It would appear like the car is purging but from four different vents pointing towards the tires cooling them down causing the gas inside them to expand and push the treads out. Naturally, after the launch the tires would heat up making the tread disappear back into the tires. There may be a button on the steering wheel that reads Tire Coolant.



https://www.google.com/search?q=car+purge&safe=strict&client=ubuntu&hs=tvu&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjRiL3e_NrYAhUB6oMKHUJMAcAQ_AUICigB&biw=1594&bih=780

The RPMs, the speed of the vehicle, the surface, cruising mode, and the temperature are some of the variables.

Maximus Tires might move pass tire coolant to wheels that can adjust their camber, the angle that the wheel is facing.

- What progress have you made up to this point? (research, code, etc.)

<http://www.qrg.northwestern.edu/projects/vss/docs/thermal/3-how-could-expanding-gas-cause-heat-loss.html>

- What results are you expecting?

I hope to make a 3d computer model of the tire cooling system. I need help to know what program to code this in: NetLogo? Python?