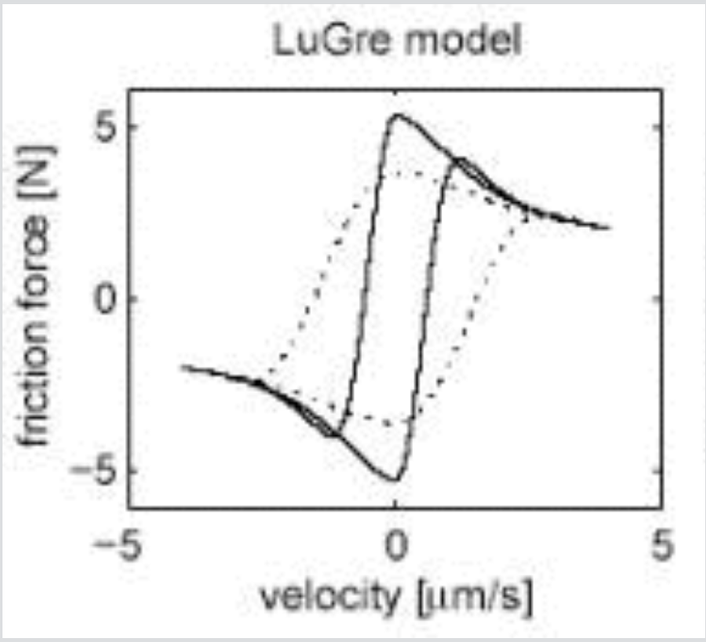
My Grand Challenges

I prefer coarse (simple) models

$$\frac{dz}{dt} = v - \sigma_0 \frac{|v|}{g(v)} z = v - h(v)z,$$

$$F = \sigma_0 z + \sigma_1 \dot{z} + f(v),$$

LuGre friction model
(the opposite of simple)



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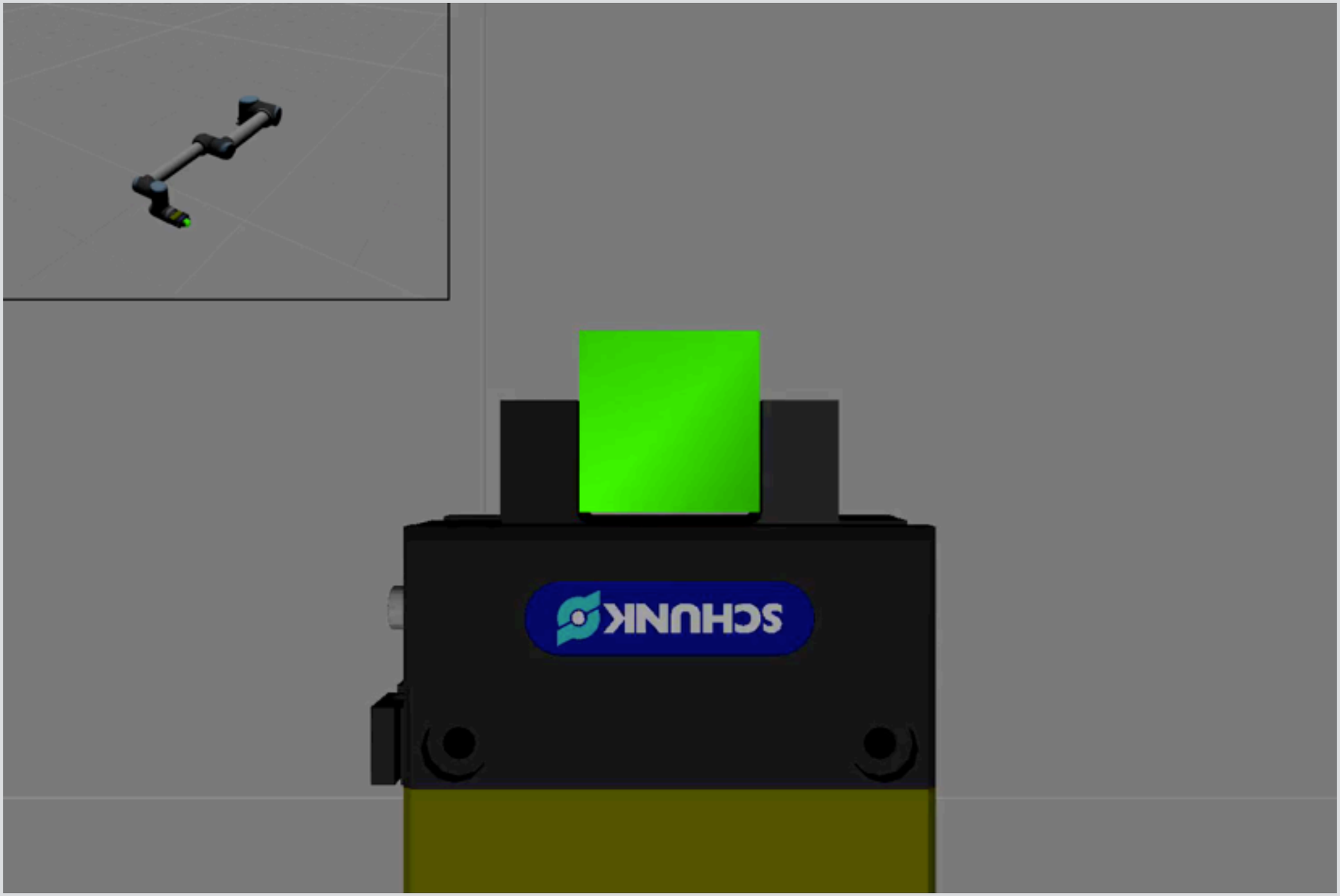
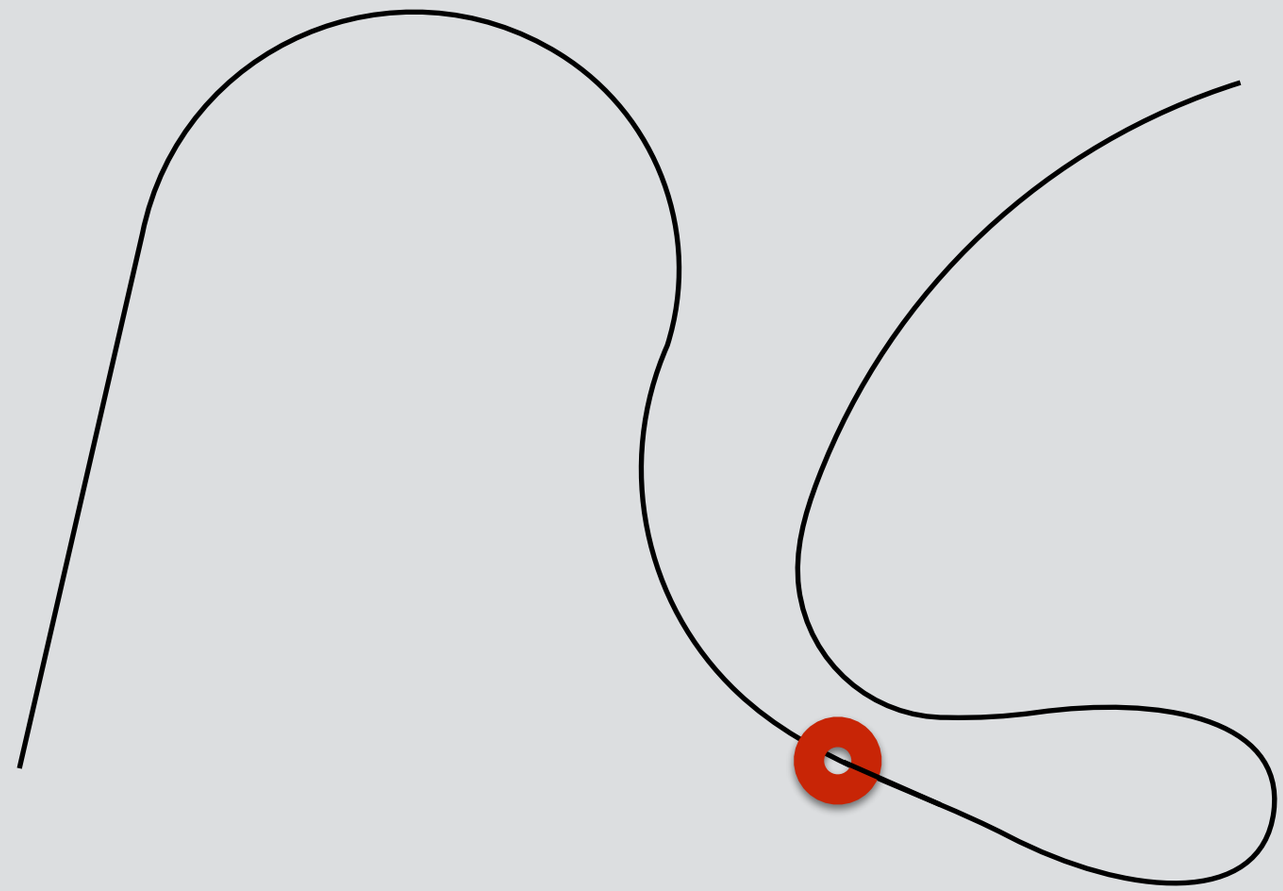
…but without interpenetration-related artifacts.



Challenge: evaluate multi-rigid body dynamics simulation accuracy without parameter tuning.



Key: not a halfspace geometry

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My “creative” idea: assemble an auto suspension and test it virtually.