Using virtual_robot with PedroPathing and RoadRunner

virtual_robot now includes libraries for PedroPathing 2, and RoadRunner 1.0.1, with minor modifications as needed for compatibility.

The org.firstinspires.ftc.teamcode package now has “pedroPathing” and “roadrunner” sub-packages that include pedroPathing and roadrunner quickstart teamcode, with modifications. Much of the modification involved changes and/or removal of tuning opmodes. Tuning has already been performed for the MecDynamic robot configuration in virtual_robot (in the “Constants.java” file for PedroPathing and in the “MecanumDrive.java” file for RoadRunner).

PedroPathing and RoadRunner are now useable “out of the box”. For examples, try the Circle, Triangle, and TestBezier opmodes for PedroPathing and the SplineTest and TestRRAuto opmodes for RoadRunner.

Currently, tuning in virtual_robot is better for RoadRunner than for PedroPathing. I have tried many tweaks to the tuning with PedroPathing, and have also tried adding damping to the virtual_robot physics in a couple of ways, but haven’t been able to eliminate oscillation at the end of paths. Note that this is NOT intended as a criticism of PedroPathing, which I have not actually tried using a real robot. It may be because virtual_robot does not handle deceleration in a completely realistic manner.