1 Regression Test of GVTK

Date: 05/01/2023 11:45:37

Regression Test Status: FAILED

This test case is completed using 6 particles from the Cylindrical Flow dataset. Passing of this test means no changes in results have occurred with the new additions made to the toolkit. The standard edition of GVTK used for this testing is the November 2022 release. If you are wanting to complete changes in the physics that results in differences in final velocity and the forces, you will fail this test. Please update the rest of the team if this is the case before moving on. This test will give you a summed error across the timesteps for all forcing terms to see which terms are changing most drastically due to the updates to help guide debugging or physics updates. FAILURE WILL RETURN A DIVIDE BY ZERO ERROR TO PREVENT MERGERS!

Summary of Summed Errors:

Velocity Error: 15295.338876598356
Position Error: 1966.5533145914744
Drag Error: 17.401707906140032
ShearGradLift Error: 21.914155480778195
Body Force Error: 0.0

Summary/Actions: Regression test has failed meaning there are drastic changes in the results of the code. If there is supposed to be drastic changes, please make sure you have conferred with the team that this is correct and then update the Standard File in gitlab by running the input-tracer-analytical-standard.dat for the cylindrical flow dataset. Run the regression test again with the new standard files to make sure it passes.

Please report any differences. If making updates that are non-physics based, this test MUST BE PASSED before any commits to gitlab!
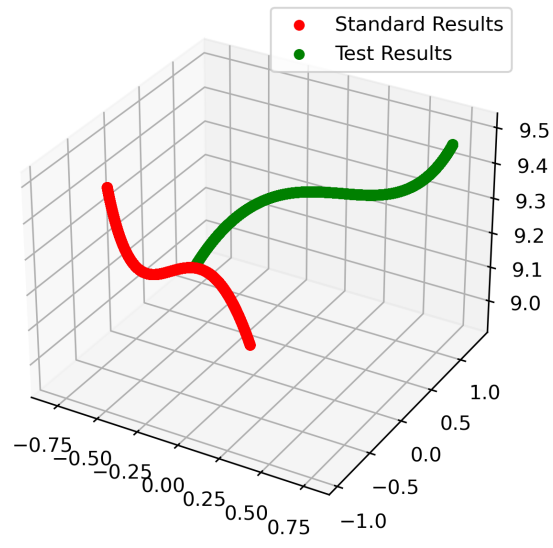
Figure 1: *Position of the particle for both the test and standard results*