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PHYS-230 LAB

QX2

Assuming the roller coaster operates at a speed such that the normal reaction force on you is non-zero, find the direction (up or down) in which your hair would be pointing if you were riding upside down (with your head down).

Ans:- As normal force is zero and my position is upside down, it means that the roller coaster is not moving vertically because in this case, there are some normal reaction forces, which is in the form of centrifugal force.

When we go upside down on a roller coaster, inertia keeps us from falling out. This resistance to a change in motion is stronger than gravity. It is what presses our body to the outside of the loop as the roller coaster spins around.

∴ The only option left is horizontal.

Here, my hair will point towards left or right when roller coaster moves right & left simultaneously.

NOTE :- I missed submitting a lab assignment, hopefully this compensates for it. Sorry!