Contingency Activity: Do any or all of these tasks.

Use the video of Usain Bolt's 100 meter dash world record in Berlin on August 16. 2009, to be found at: https://www.youtube.com/watch?v=SyY7RgNLCUk

Plot the position as a function time using your favorite plotting software. Here's an example:

Is there a region in which Bolt's acceleration seems to be constant? If so, explain and give the acceleration.

Find the net horizontal force that produces this acceleration.

Numerically determine the speed and acceleration as a function of time and plot them.

(HINT: I find max speed seems to be about 12 m/s)

Add aerodynamic drag to the model and determine the force Bolt exerts on the ground and the drag forces opposing his motion.

Here's what the acceleration looks like: (why so noisy when the position data is so nice?)