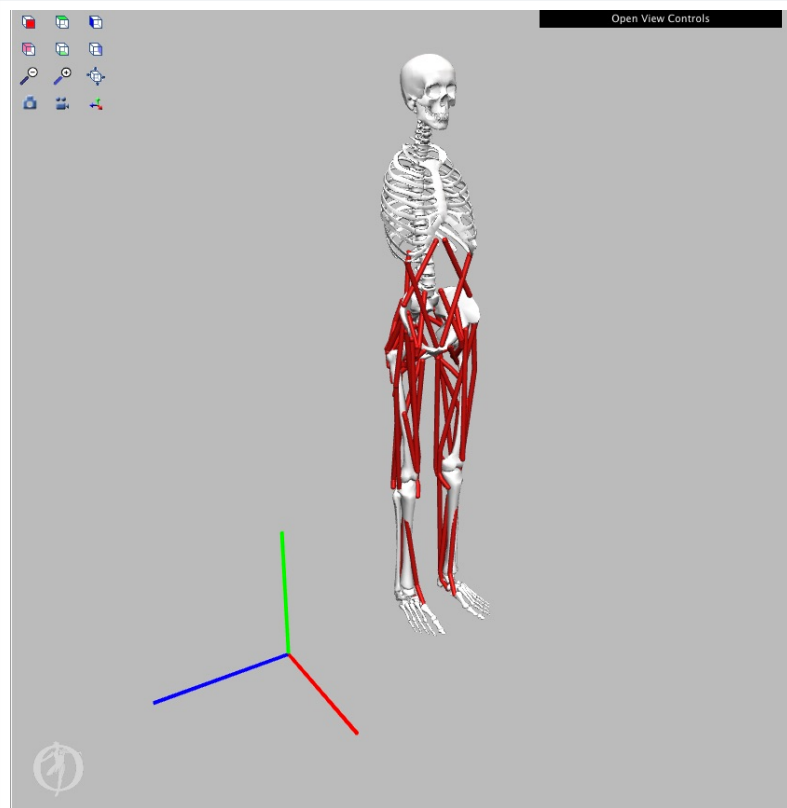


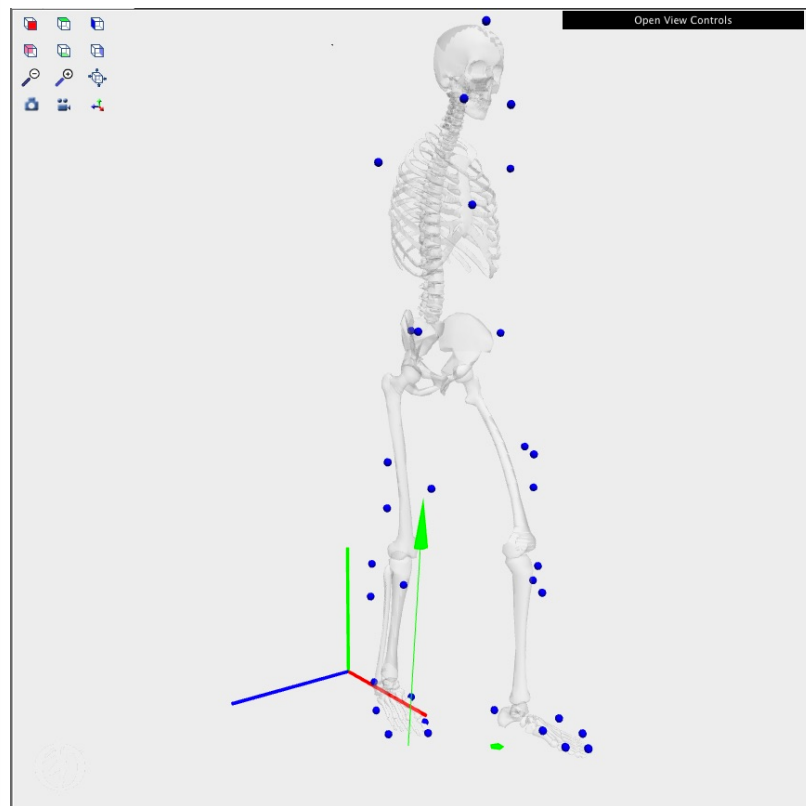
Coordinate Systems



OpenSim uses the standard engineering coordinate system of X forward (Red), Y up (Green), Z right (Blue). This convention is confirmed using the [right-hand rule](#).

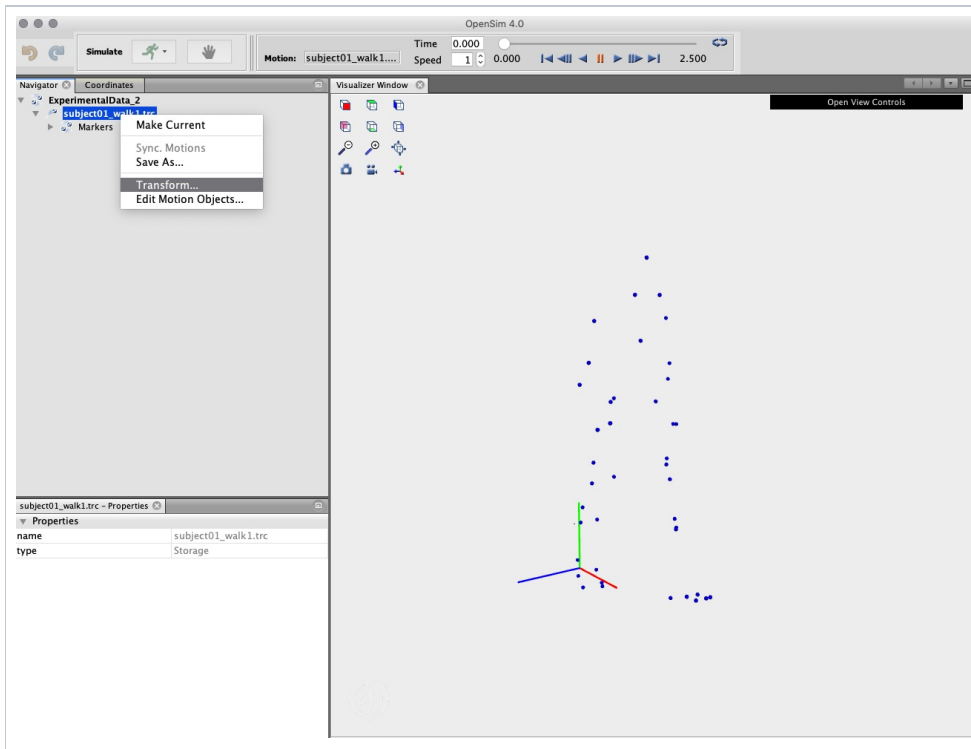
When collecting data to input into OpenSim it is important to note the coordinate system of the collection system. Every set of (x, y, z) coordinates obtained from a motion capture system is given relative to some coordinate system. Typically, this coordinate system is called the *laboratory coordinate system*, *laboratory coordinates*, or *Ground*.

Typically, motion capture systems use laboratory coordinates such that X is forward, Y is left, and Z is up. Collecting any data in this coordinate system would require a 90 degree rotation about the X axis before using in OpenSim.



Before inputting any data from motion capture into OpenSim, it is your responsibility to ensure that all (x, y, z) values have been transformed from the laboratory coordinate system to the model coordinate system used in OpenSim.

In the figure to the left, marker data (blue spheres) and ground reaction forces (green arrows) have been transformed from the motion capture coordinate system to the OpenSim coordinate system. This required a 90-degree rotation and all distances being converted to meters.



To perform the rotation, you could use conversion packages found [here](#) or use the rotation method in the OpenSim GUI.

To transform Data in the GUI, see section [Previewing Motion Capture \(Mocap\) Data](#) for further details on how to view and transform experimental data in the GUI.

Next: [Marker \(.trc\) Files](#)

Previous: [Collecting Experimental Data](#)

Home: [Preparing Your Data](#)