Custom Shadow Segments

Overview

Virtual segments provide a convenient way to include multiple definitions for a segment within a single model, but these multiple definitions do not easily allow for external constraints (like an Inverse Kinematic chain) to be applied consistently across all segment definitions. For example, if a Virtual Segment is defined with relation to a segment and then an Inverse Kinematics constraint is applied to the original segment, the changes in the original segment's pose estimation do not propagate to the Virtual Segment.

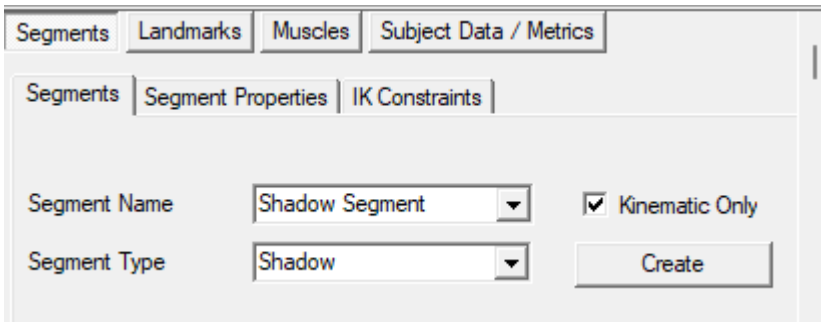
Shadow segments resolve this issue by allowing that segment's pose to be defined as a transformation of the original segment's pose estimation. Users can use the Expression function Pose_4x4 when defining their own shadow segments.

This tutorial will demonstrate how to create custom shadow segments and how they can be used.

Segment Definition

The shadow segment must be defined based on a pre-existing segment therefore, before continuing ensure you have a model with a already defined segment that you wish to shadow.

Once this segment is creating you create this segment the same way as any other by going to the **Segments** tab of your model. Type in your desired shadow segment name (often Shadow Segment), change the segment type to shadow. select Kinematic only and press create. When using a shadow segment, it should not be used in the kinetic chain as they are primarily reference segments rather than physical body segments. As they don't have any mass and inertial properties they should not be included in the kinetic chain.



Once created you will be automatically taken to the new shadow segment tab. First select the shadow you wish to shadow (The pelvis will be used for this example). Now you must define the 4×4 rotation which is the heart of defiing the shadow segment. More information on this command can be found .