

IOR Gait Shoulder Orientation and Translation

Overview

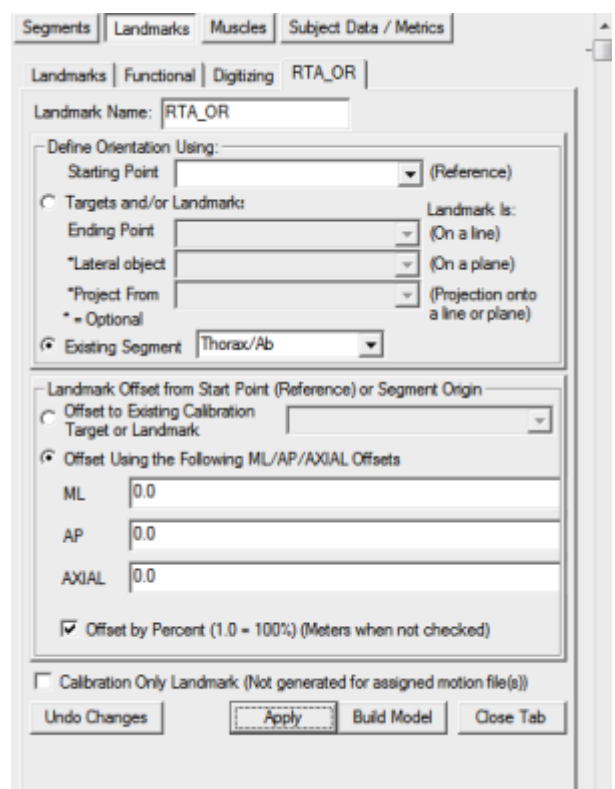
This tutorial is a continuation of the [IOR Gait Full Body Tutorial](#). This tutorial goes through computing the orientation and the translation of the shoulder targets relative to the trunk segment.

Shoulder LB

Below defines the orientation of the line between the shoulder targets (LCAJ/RCAJ) relative to the trunk segment

Shoulder LB & AR Landmarks

1. Create RTA_OR:



The screenshot shows the 'Landmarks' tab in the IOR software. The 'RTA_OR' landmark is being configured. The 'Landmark Name' is 'RTA_OR'. The 'Define Orientation Using' section has 'Starting Point' set to '(Reference)'. The 'Ending Point' is set to '(On a line)'. The '*Lateral object' is set to '(On a plane)'. The '*Project From' is set to '(Projection onto a line or plane)'. The '*Optional' checkbox is checked. The 'Existing Segment' is set to 'Thorax/Ab'. The 'Landmark Offset from Start Point (Reference) or Segment Origin' section has 'Offset to Existing Calibration Target or Landmark' set to '0.0'. The 'Offset Using the Following ML/AP/AXIAL Offsets' section has 'ML' set to '0.0', 'AP' set to '0.0', and 'AXIAL' set to '0.0'. The 'Offset by Percent (1.0 = 100%) (Meters when not checked)' checkbox is checked. The 'Calibration Only Landmark (Not generated for assigned motion file(s))' checkbox is unchecked. The 'Apply' button is highlighted.

1. Click **Landmarks** button
2. Click **Add New Landmark** button
3. Create Landmark: RTA_OR
 - **Landmark Name:** RTA_OR
 - **Existing Segment:** Thorax/Ab
4. Offset Using the Following **ML/AP/AXIAL** Offsets:
 - **X:** 0.0 **Y:** 0.0 **Z:** 0.0

5. **Check:** Offset by Percent (1.0 = 100%) (Meters when not checked)
6. **Do NOT Check:** Calibration Only Landmark (Not generated for assigned motion file(s))

2. Create RTA_ML:

1. Click **Landmarks** button
2. Click **Add New Landmark** button
3. Create Landmark: RTA_ML
 - **Landmark Name:** RTA_ML
 - **Existing Segment:** THORAX/Ab
4. Offset Using the Following **ML/AP/AXIAL** Offsets:
 - **X:** 0.5 **Y:** 0.0 **Z:** 0.0
5. **Check:** Offset by Percent (1.0 = 100%) (Meters when not checked)
6. **Do NOT Check:** Calibration Only Landmark (Not generated for assigned motion file(s))

Shoulder LB & AR Definitions

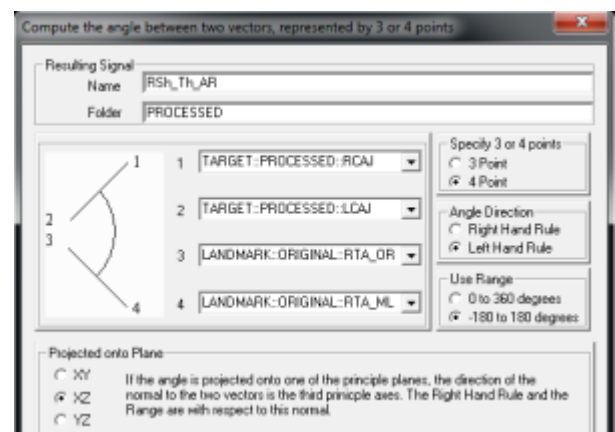
3. Create RSh_Th_LB planar angle:

1. Define **Resulting Signal** Name: RSh_Th_LB
2. Calculate a **4 point angle** between the following targets:
 1. LANDMARK::ORIGINAL::RTA_ML
 2. LANDMARK::ORIGINAL::RTA_OR
 3. TARGET::PROCESSED::LCAJ
 4. TARGET::PROCESSED::RCAJ
 - **Angle Direction:** Left Hand Rule
 - **3D Space:** Always 0 to 180 degrees
 - **Projected onto Plan:** YZ
 - **NOTE:** The reference segment will need to be changed to RTA within the text options.

4. Create LSh_Th_LB planar angle:

- When defining the left signal, use same definitions **except** set:
 - **Angle Direction:** Right Hand Rule

5. Create RSh_Th_AR planar angle:



1. Define **Resulting Signal** Name: RSh_Th_AR
2. Calculate a **4 point angle** between the following targets:
 1. TARGET::PROCESSED::RCAJ
 2. TARGET::PROCESSED::LCAJ
 3. LANDMARK::ORIGINAL::RTA_OR
 4. LANDMARK::ORIGINAL::RTA_ML
 - **Angle Direction:** Left Hand Rule
 - **3D Space:** Always 0 to 180 degrees
 - **Projected onto Plane:** XZ
 - **Note:** The reference segment will need to be changed to RTA within the text option

6. Create LSh_Th_AR planar angle:

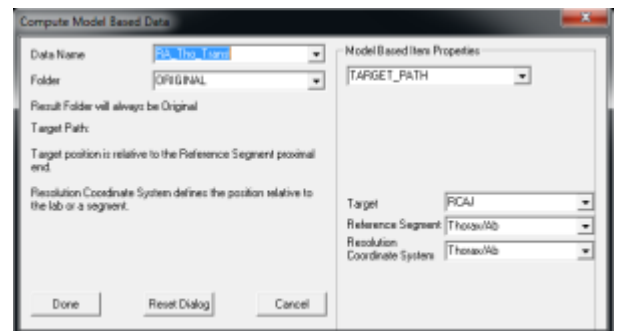
- When defining the left signal, use same definitions **except** set:
 - **Angle Direction:** Right Hand Rule

Translation

Below defines the translation of the shoulder targets (LCAJ/RCAJ) in the trunk coordinate system

Shoulder Translation Definitions

7. Define RA_Tho_Transl:



1. Open the **Compute Model Based** dialog
2. Select **TARGET_PATH** from drop down list
 - **Date Name:** RA_Tho_Transl
 - **Target:** RCAJ
 - **Reference Segment:** Thorax/Ab
 - **Resolution Coordinate System:** Thorax/Ab

8. Define LA_Tho_Transl:

- When defining the left signal, use the same definitions **except** set:
 - **Target:** LCAJ

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