

$$\text{hip } x = |-s (c \sin(\theta) - 0.5 \cdot \text{asis_distance})|$$

$$\text{hip } y = |(-x_{\text{dis}} - r_{\text{marker}}) \cos(\beta) + c \cos(\theta) \sin(\beta)|$$

$$\text{hip } z = |(-x_{\text{dis}} - r_{\text{marker}}) \sin(\beta) - c \cos(\theta) \cos(\beta)|$$
 | where: | | $c = |0.115 \cdot \text{leglength} - 0.0153|$ (in meters) | $\theta = |28.4 \cdot \pi / 180.0|$ | $\beta = |18.0 \cdot \pi / 180.0|$ | $\text{asis_distance} = |\text{asis to asis distance, measured during clinical exam}|$ | $x_{\text{dis}} = |\text{anterior/posterior component of the asis/hip center distance in the sagittal plane of the pelvis and measured during the clinical exam}|$ | if x_{dis} not measured: | | $x_{\text{dis}} = |0.1288 \cdot \text{leglength} - 0.04856|$ | $r_{\text{marker}} = |\text{marker radius (in meters)}|$ | $s = |+1|$ for the right side and -1 for the left side | \ these equations are adapted from the article: **davis rb, ounpuu s, tyburski d, gage jr.** (1991) "a gait analysis data collection and reduction technique." human movement science, 10: 575-587. \ ===== modifying asis distance ===== the default asis distance is the computed distance between the asis markers. the value computed can be found in the subject metrics tab \ metricsdlg.jpg \ select the asis_distance item and modify the item: \ asis_distance_default.png \ a measured value or an expression can be used to replace the automatic calculation \ asis_distance_custom.png \

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Last update: 2024/06/19 13:36

