Absolute method = angular distance

Relative method = relative angular position

Two triangles methos = the method in the class

Try three methods of calculating knee angle 2D

RMS of absolute vs relative method : 0.23°

RMS of absolute vs two triangles : 0.23°

RMS of relative vs two triangles method : 0.00°

The reason of the diff -> the absolute method is good for 0 to 180 degrees

一張含有 文字, 螢幕擷取畫面, 行, 字型 的圖片

AI 產生的內容可能不正確。

一張含有 文字, 繪圖, 圖表, 行 的圖片

AI 產生的內容可能不正確。

Event setting

Event1: ankle linear velocity > 1 m / s

Even2: ankle linear velocity < 1 m / s after event 1

一張含有 文字, 繪圖, 行, 圖表 的圖片

AI 產生的內容可能不正確。一張含有 文字, 繪圖, 行, 圖表 的圖片

AI 產生的內容可能不正確。一張含有 文字, 繪圖, 行, 圖表 的圖片

AI 產生的內容可能不正確。Knee angle -> using relative angle

Description

|  |  |
| --- | --- |
|  | information |
| Knee angle | Before event 1   * Reduce the angle: the early swing phase * Increase the angle: to prepare landing   Event 1   * Max the knee angle to touch the ground * Knee prepares to impact and support weight   Btw event 1 and 2   * Reduce the angle for the next extension * Increase the angle for the heel and toe off during the mid to late stance phase (propulsion)   After Event2   * Knee flexion for the swing phase |
| Knee angular velocity | Before event 1   * Flexion to move forward * Speed up extension to move forward * Slow down extension to prepare for landing   Event1   * Angular velocity is around zero to be rigid for landing   Btw event 1 and 2   * Flexion followed by increasing extension velocity to push off   After event2   * Flexion velocity rises again for the next swing |
| Knee angular acc | Before event1   * Positive and negative acceleration swings as the leg prepares for landing   Event1   * Negative acceleration spike as extension slows to prepare for landing   Btw event1 and 2   * Alternating acceleration from negative to positive as knee flexes then extends for push-off   After event2   * Positive acceleration of knee flexion phase in swing phase |