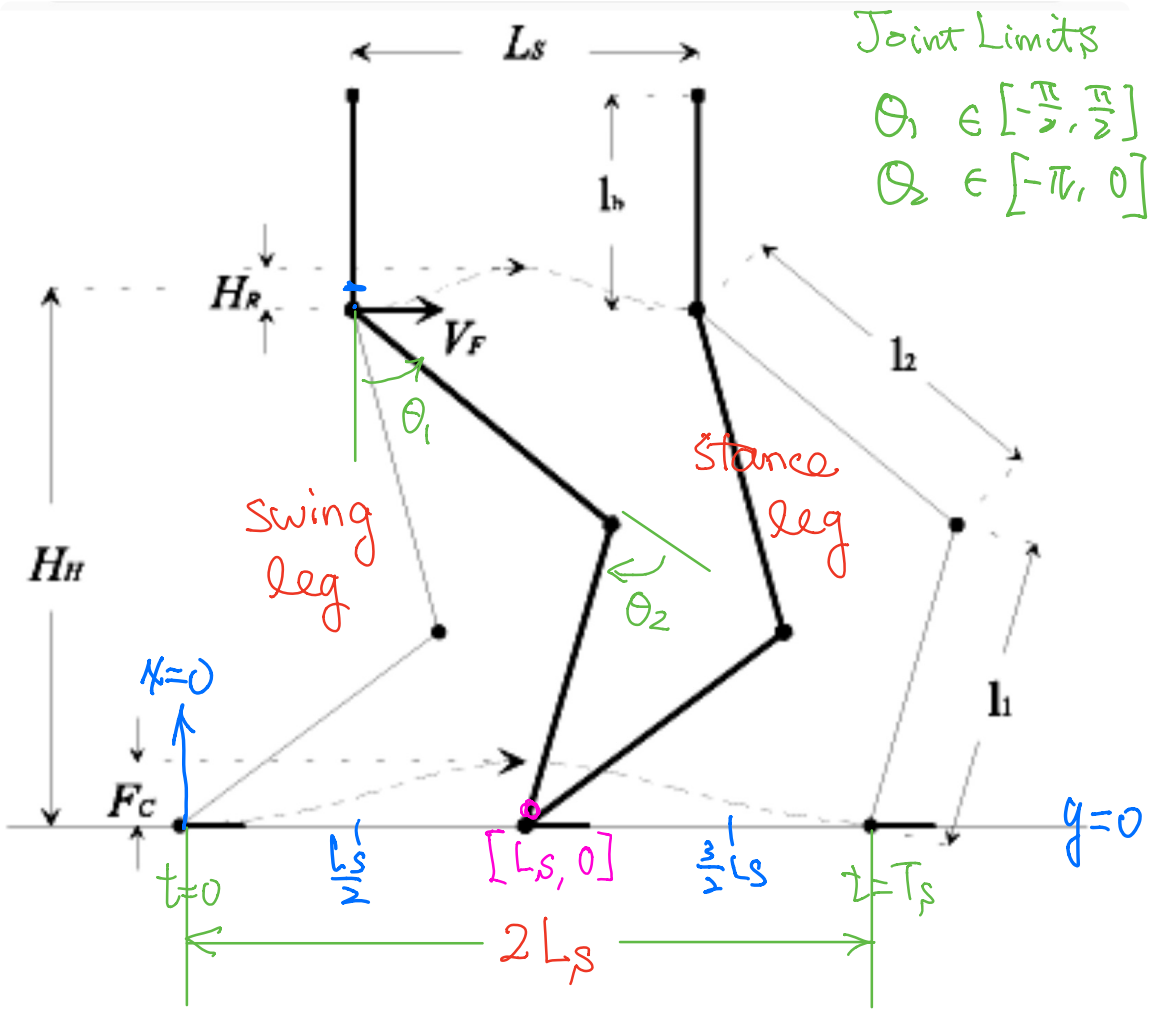


Joint Limits

$\theta_1 \in [-\frac{\pi}{3}, \frac{\pi}{2}]$

$\theta_2 \in [-\pi, 0]$

脚軌跡: Global

$$\left(2L_s \frac{t}{T_s},\ \frac{F_c}{2} - \frac{F_c}{2}\cos\left(2\pi \frac{t}{T_s}\right) \right)$$

Hip軌跡:

$$\left(\cancel{\frac{L_s}{2} + tV_F},\ H_H - \frac{H_R}{2}\cos\left(2\pi \frac{t}{T_s}\right) \right)$$

$$\frac{L_s}{2}\left(1 - \frac{t}{T_s}\right) + \frac{3}{2}L_s\left(\frac{t}{T_s}\right)$$

$$\left(= \frac{L_s}{2} + L_s \frac{t}{T_s}\right)$$

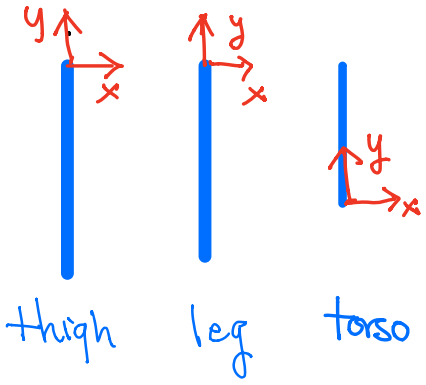
progression velocity

$$V_F = \frac{L_s}{T_s}$$

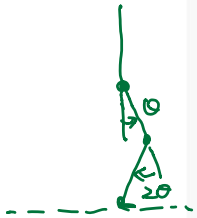
fast vs. slow walk.

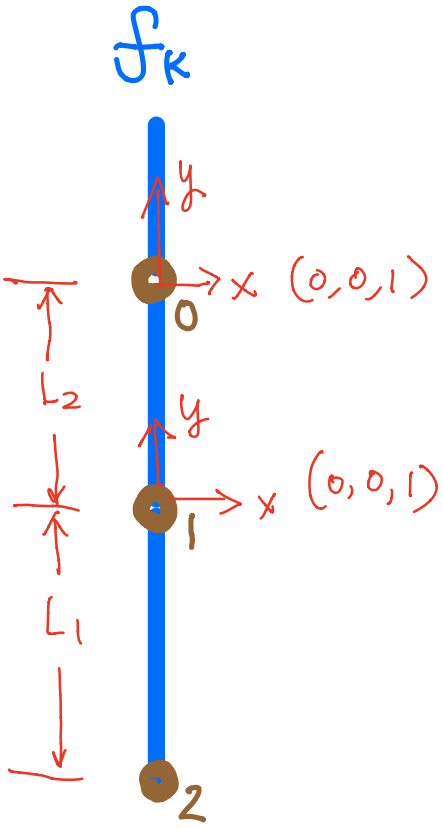
Measurement: (cm)

L_S	5.3
L_2	5.2
L_1	4.8
F_C	1.0
H_R	0.6
H_H	8.3
(L_R	3.3)



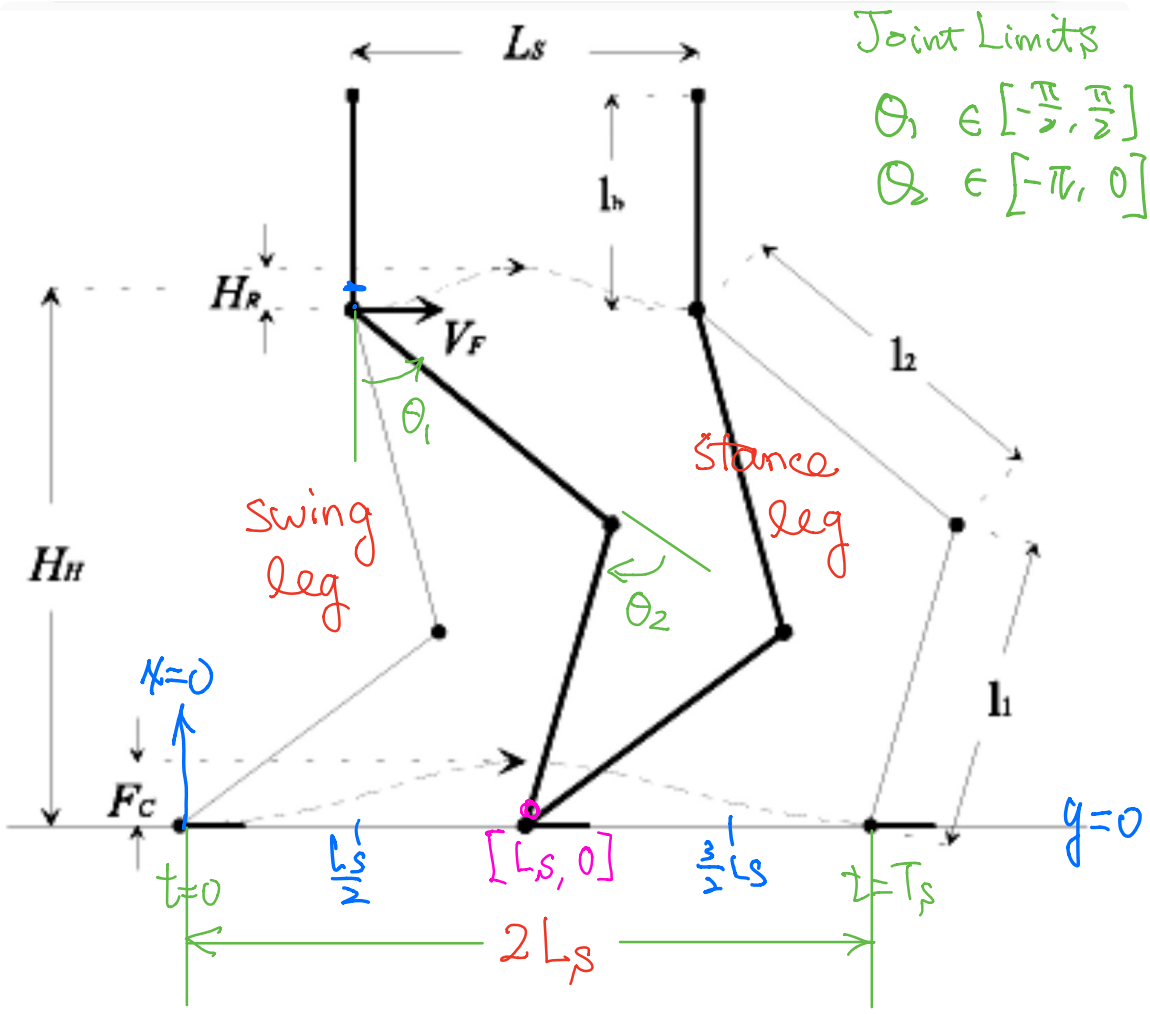
为了避免 singularity.
机器人站立时，都保"曲膝"





Game homework 4.

- 平面走路: K-drive interface
  V之变化 考虑 步幅大小(Ls)及周期(Ts)
- 利用 gyroscope interface follow人物.
- V=0: stand - walk - stand
  stand時 $\theta_1 = \theta_2 =$ small.
  (不要設成0, 以避免 singularity)



Joint Limits

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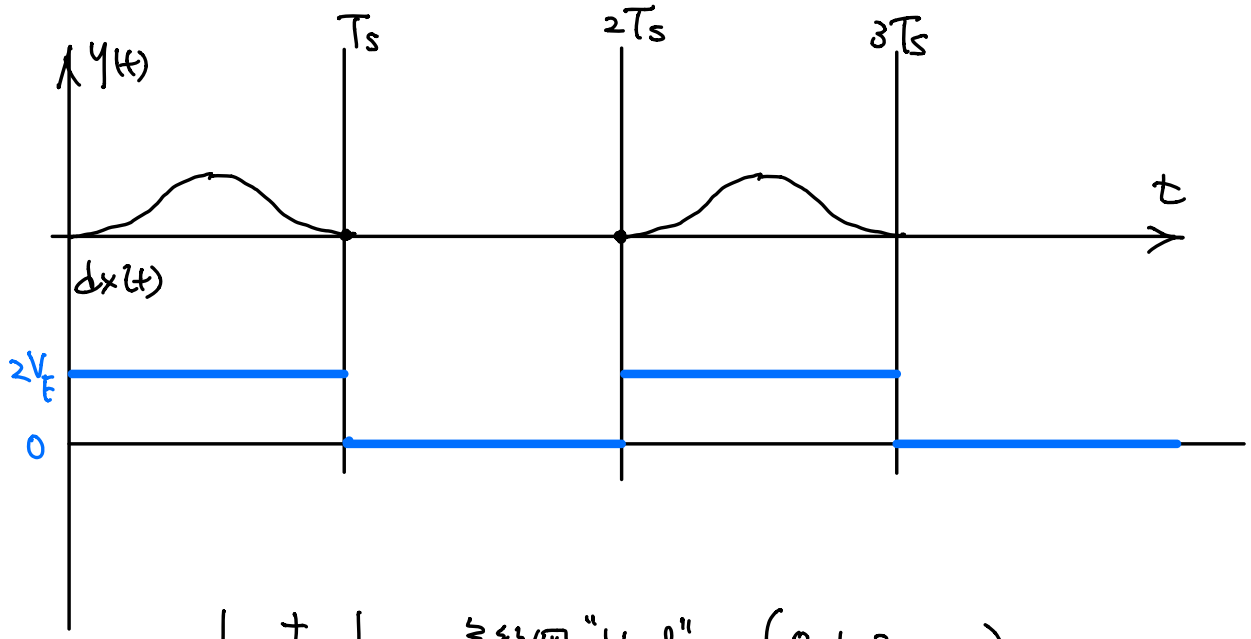
progression velocity

$$V_F = \frac{L_s}{T_s}$$

fast vs. slow walk.



$n = \left\lfloor \frac{t}{T_s} \right\rfloor$ --- 第幾個 "block" $(0, 1, 2, \cdots)$

n is even. $tt = t \bmod T_s$ $y = y(tt)$

$x \mathrel{+}= 2V_F \cdot tt$

odd $y = 0$

x 不变.