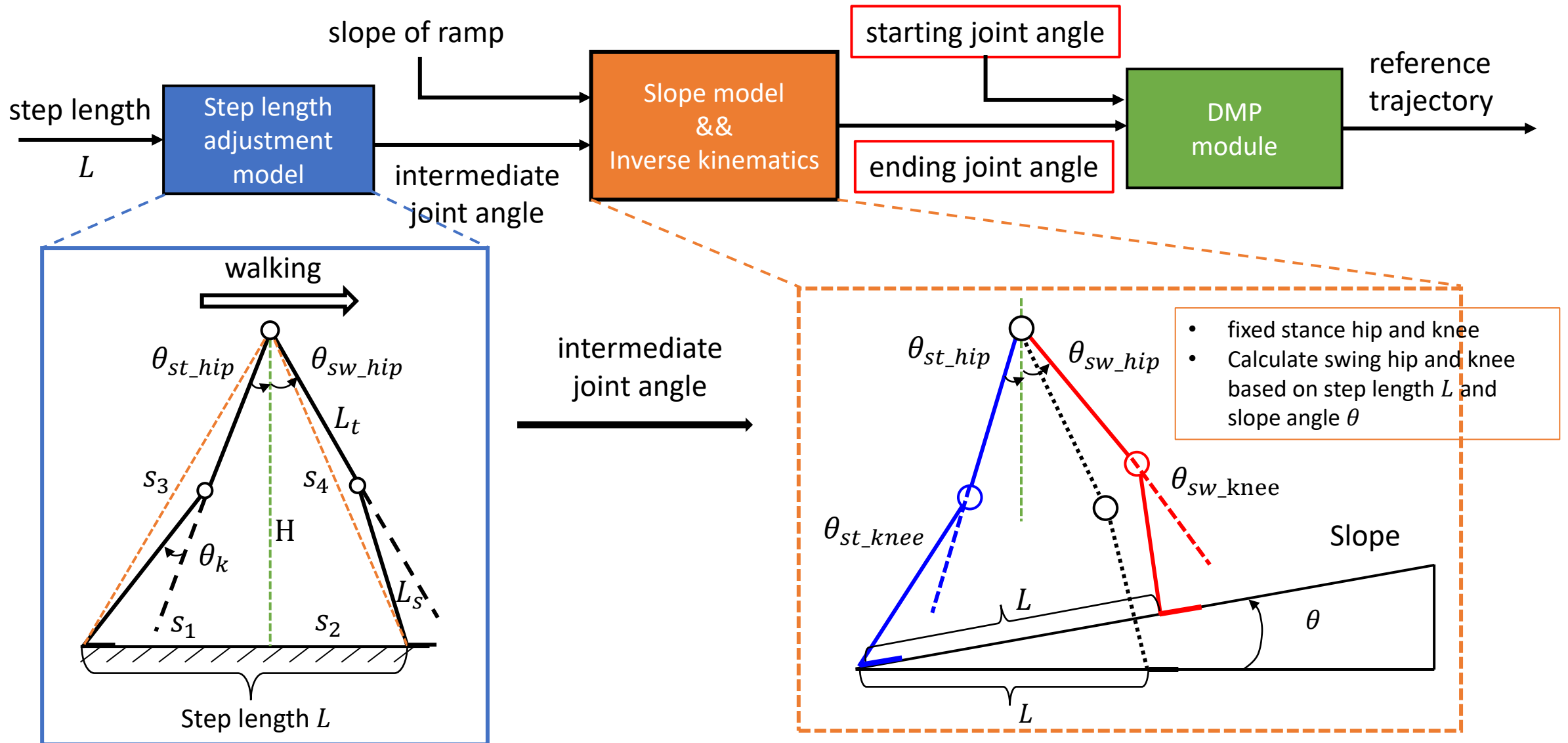


Gait planning for slope walking



Improved slope model

- Added the ankle constrain for the ending stance hip and knee angles:

$$st_ankle_{level_ground} = st_ankle_{slope}$$



$$\theta_{st_hip} - \theta_{st_knee} = \hat{\theta}_{st_hip} - \hat{\theta}_{st_knee} - slope$$



$$\hat{\theta}_{st_hip} = \theta_{st_hip} + \alpha \cdot slope$$

$$\hat{\theta}_{st_knee} = \theta_{st_knee} - (1 - \alpha) \cdot slope$$

$$\alpha \in [0,1]$$

