Figure 1

Condition 1: Starting farther away from stairs

Condition 2: Starting in front of the stairs
Figure 2
Figure 3
Figure Captions:

Figure 1: Pictures of the instrumented stairway used for the experiment. The mean and standard deviation values of the average self-selected comfortable speed for all the participants during Condition 1 were 1.42±0.21 m/s

Figure 2: Ensemble averaged profiles of sagittal plane moments of A) Ankle B) Knee and C) Hip joints during stair ascent normalized to body mass under both the conditions and both the steps. These profiles represent an average of all the subjects. Figure 2A shows that the foot experiences peak plantiflexor moment during terminal stance phase prior to push-off. Figures 2B and 2C show that the knee and hip joints experience peak extensor moments immediately after foot-strike. S1 – Step 1; S2 – Step 2; C1 – Starting from farther away; C2 – Starting from front; Positive and increasing ordinate values represent for hip and knee: extensor and for ankle: plantar flexor

Figure 3: Ensemble averaged profiles of sagittal plane powers of A) Ankle B) Knee and C) Hip joints during stair ascent normalized to body mass under both the conditions and both the steps. These profiles represent an average of all the subjects. Figures 3A, 3B and 3C reveal that while positive power is produced at the knee and hip joints after foot-strike, at the ankle joint it is produced prior to foot-off. S1 – Step 1; S2 – Step 2; C1 – Starting from farther away; C2 – Starting from front

Figure 4: Mean (SE) of dependent variables that showed significant interaction between the step and condition factors (P < 0.05). A) Peak Knee Extensor Moment B) Peak Hip Flexor Moment C) Peak Ankle Negative Power D) Peak Knee Positive Power during stair ascent. S1 – Step 1; S2 – Step 2; C1 – Starting from farther away; C2 – Starting from front