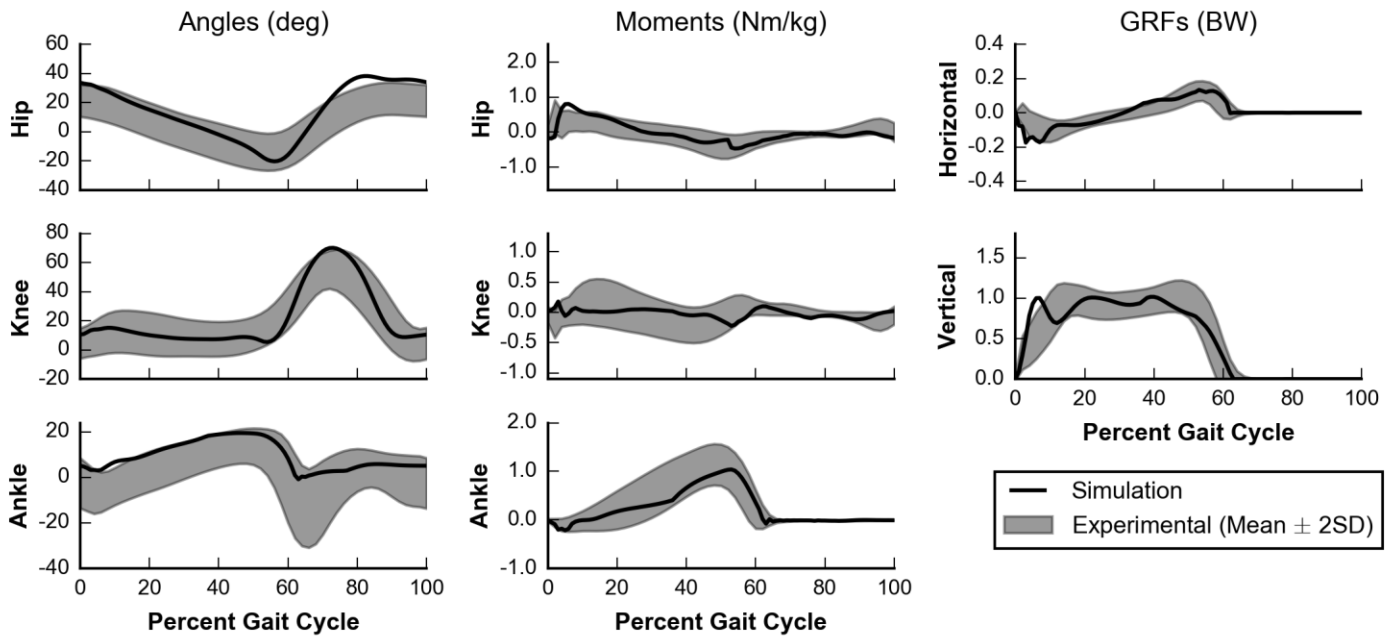
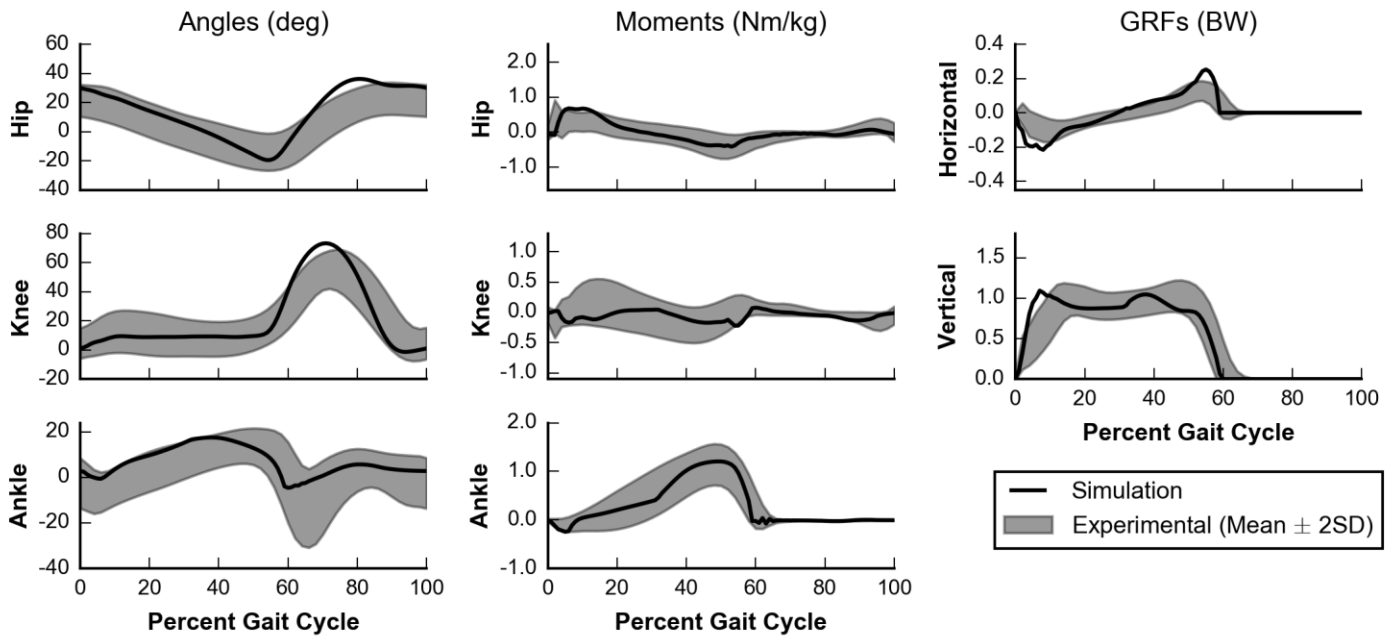


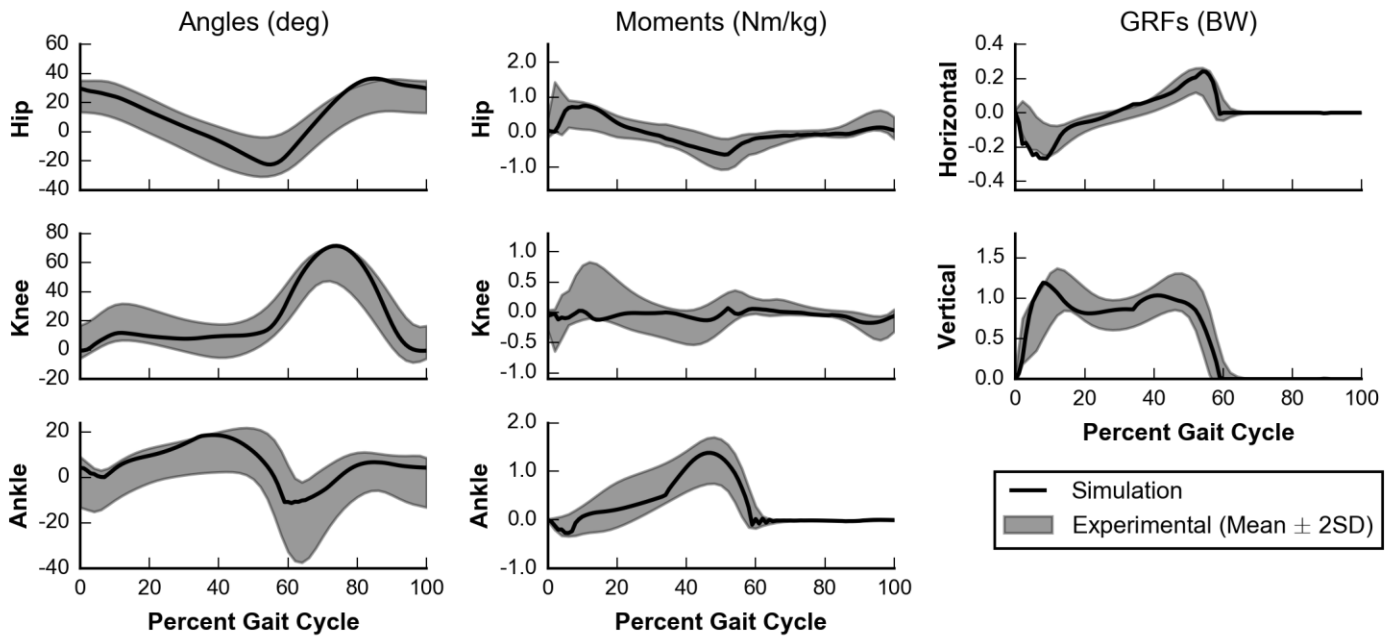
**S1A Fig. Simulated walking at 0.55 m/s vs experimental data at  $0.50 \pm 0.20$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).



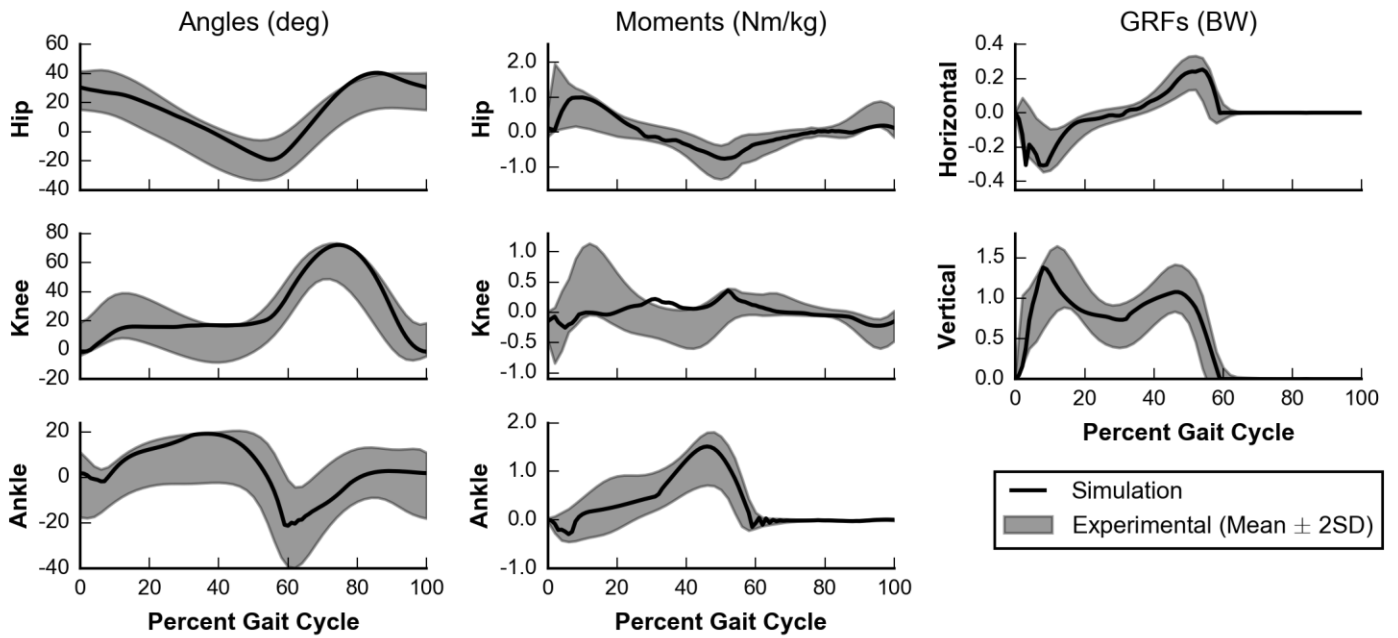
**S1B Fig. Simulated walking at 0.79 m/s vs experimental data at  $0.84 \pm 0.16$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).



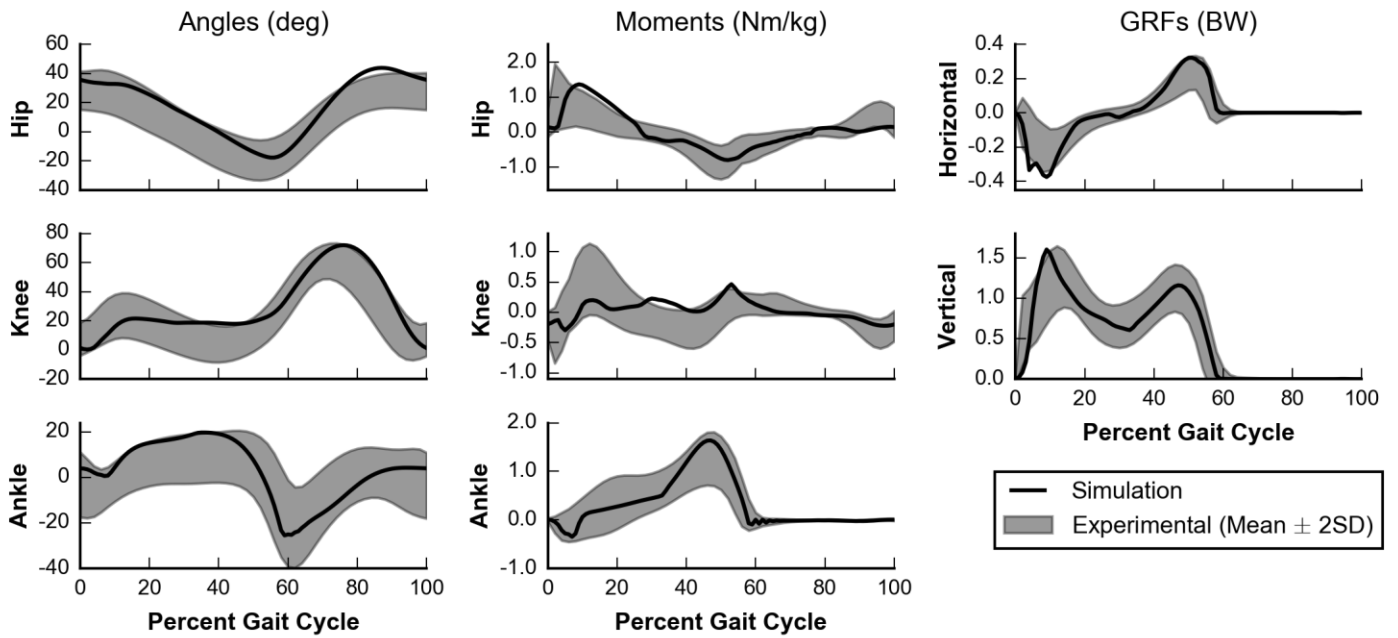
**S1C Fig. Simulated walking at 1.04 m/s vs experimental data at  $0.84 \pm 0.16$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).



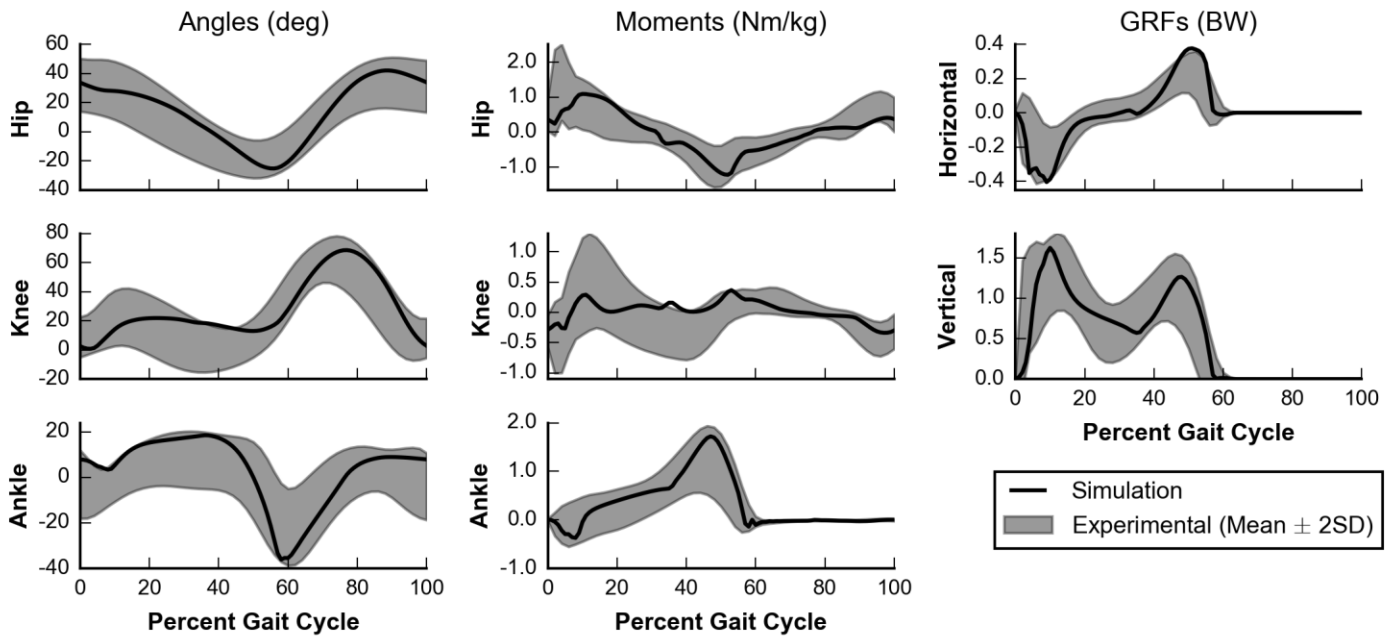
**S1D Fig. Simulated walking at 1.22 m/s vs experimental data at  $1.24 \pm 0.15$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).



**S1E Fig. Simulated walking at 1.46 m/s vs experimental data at  $1.62 \pm 0.18$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).



**S1F Fig. Simulated walking at 1.71 m/s vs experimental data at  $1.62 \pm 0.18$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).



**S1G Fig. Simulated walking at 1.96 m/s vs experimental data at  $2.01 \pm 0.27$  m/s.** To facilitate comparison, normalized speed from experimental data was converted using the model's leg length (0.856 m).