



Figure 9: HDP-HMM results on the motion capture dataset. *Top Row*: Learned states of the runs with highest \mathcal{L} for $\kappa = 0$ (left) and $\kappa = 300$ (right). True state sequence labels are shown at the top of each row and estimated on the bottom. *Middle Row*: Wire skeletons of the actual motion capture data showing our learned segmentation of the fourth activity (“knee-raises”) in sequence five. We find that our forest-green state corresponds to right knee-raises (left), the brief yellow state to resting (center), and the pink state to right knee-raises (right). *Bottom Row*: Wire skeletons for the final activity in sequence five (“twist”). The HDP-HMM breaks this exercise into two distinct states: our gray state corresponds to horizontal arm-twirling (left), while our brown state is a back-bending motion (right).