FIG. 1. SAW chain rotation schematic (simulation). (a) In 3-D, the shorter arm rotated around the z-axis by ϕ, then around the y-axis by θ. (b,c) In 2-D or spherical space, the shorter arm rotates around z-axis by ϕ. (d) If some beads are confined to a spherical surface but the pivot bead is not, the right subarm rotates randomly, then the pivot subchain rotates to return its right-end bead to the surface, and finally the right side subchains reconnect.