

Three balls

Three small identical balls (denoted as A, B, and C) of mass m each are connected with two massless rods of length l so that one of the rods connects the balls A and B, and the other rod connects the balls B and C. The connection at the ball B is hinged, and the angle between the rods can change effortlessly. The system rests in weightlessness so that all the balls lie on one line. The ball A is given instantaneously a velocity perpendicular to the rods. Find the minimal distance d between the balls A and C during the subsequent motion of the system. Any friction is to be neglected.