

Figure 4.5: Forces on the oscillating ball

In the second case, the resultant force is the centripetal one and is directed horizontally. Hence, the tension T_2 of the string should be resolved into a vertical and a horizontal force, and the forces perpendicular to the resultant force, i.e, the vertical forces, should be equated to each other (Fig. 4.6).

$$\therefore T_2 \cos \alpha = P \quad \text{or} \quad T_2 = \frac{P}{\cos \alpha}$$

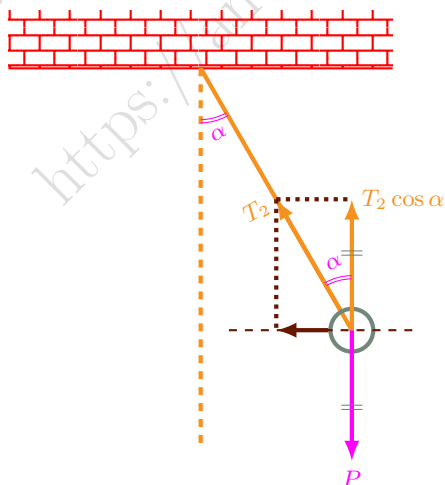


Figure 4.6: Forces on the moving ball in circle