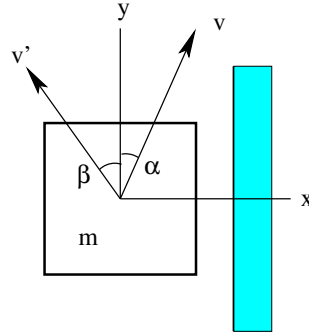


[mex219] Grazing collision between flat surfaces

Consider a cube of mass  $m$  in translational motion with velocity  $\mathbf{v}$  on a frictionless airtrack. The cube is approaching a wall at a grazing angle  $\alpha$  with one of its sides parallel to the wall. The coefficient of kinetic friction between the cube and the wall is  $\mu$ . Determine the angle  $\beta$  describing the direction of the velocity  $\mathbf{v}'$  the cube has after the collision. Assume that the recoil motion of the wall is negligible.



**Solution:**