Balancing a ball on a moving vertical wall covered in viscous fluid

TOM MULLIN, AAKESH DHATTA, University of Manchester — We present the results of experimental investigations into balancing heavy balls and cylinders on a vertical moving wall using a thin layer of viscous fluid. It is found that balance can be achieved over a very narrow range of speeds and the critical speed for fixed point behavior scales with the surface area of the cylinders and spheres. Surprising data collapse is achieved using the density of the particles.