

1-12. A normally distributed mass $M \sim N(2000, 250^2)$ kg is suspended by two nearly parallel cables as shown. The cables have a diameter $d = 20$ mm and a modulus of elasticity $E = 200$ GPa. Cable AB has length $L_{AB} = 2$ m and cable CB has a length $L_{CB} = 3$ m. What is the probability of failure if the maximum deformation is $\delta_{\max} = 0.5$ mm? ($g = 9.81$ m/s²)

(Ans. $p_f = 3.74(10^{-3})$)

