

2-20. The motor is hoisting a block with a constant acceleration of $a = 1 \text{ m/s}^2$. The uniform beam has a length of $L = 1 \text{ m}$, and its mass follows a normal distribution $m_B \sim N(100, 10^2) \text{ kg}$. If the mass of the block is $m_A \sim N(50, 5^2) \text{ kg}$, determine the components of reaction at the fixed support. Assume the size and mass of the pulley is negligible. m_A and m_B are independent.

Solutions: $O_x \sim N(540.5, 54.05^2) \text{ N}$, $O_y \sim N(1521.5, 112^2) \text{ N}$, $M_o \sim N(1031, 72.99^2) \text{ N}\cdot\text{m}$.

