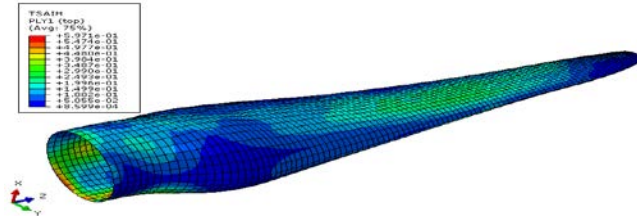


The fatigue life of a turbine blade shown in the figure follows a normal distribution $N(90,000,9,000^2)$ cycles.

- (1) What is the probability that the blade works without failure for 70,000 cycles?
- (2) After the blade has operated for 60,000 cycles successfully, what is the probability that the blade can still continue to work without failure for 20,000 cycles?



Solution

(1) $\Pr(X > 70,000) = 0.9869$

(2) 0.8671