

STA 5364, Report 2.5

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KM Problem 4.3c (p. 134-135)

We want to find a point-wise linear CI for S , after 5 years time. Here we have that the point-wise CI is given by the random interval,

$$[\hat{S}(t_0) - Z_{1-\alpha/2}\hat{\sigma}_S(t_0), \hat{S}(t_0) + Z_{1-\alpha/2}\hat{\sigma}_S(t_0)].$$

Computing the linear interval, we have,

[1] “95% Linear CI: [0.0475 , 0.2985]”

KM Problem 4.1d (p. 135)

Computing the the point-wise log CI for S , we have:

$$[\hat{S}(t_0)^{1/\theta}, \hat{S}(t_0)^\theta], \quad \theta = \exp\left(\frac{Z_{1-\alpha/2}\hat{\sigma}_S}{\ln[\hat{S}(t_0)]}\right)$$

[1] “95% Log CI: [0.1519 , 0.1953]”