

16. Exercise: Choice of representations

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1/1 point (graded)

We wish to estimate an unknown quantity Θ . Our measuring equipment produces an observation of the form $X = \Theta^3 + W$, where W is a noise term which is small relative to the range of Θ . Which type of linear estimator is preferable in such a situation?

☐ $\hat{\Theta} = aX + b$

☐ $\hat{\Theta} = aX^3 + b$

☒ $\hat{\Theta} = aX^{1/3} + b$ ✓

Solution:

If the noise W were completely absent, we would estimate Θ by letting $\hat{\Theta} = X^{1/3}$. In the presence of small noise, our estimator should again have a similar form, which argues in favor of the third option.

提交

You have used 1 of 1 attempt

i Answers are displayed within the problem

讨论

显示讨论

Topic: Unit 7 / Lec. 17 / 16. Exercise: Choice of representations