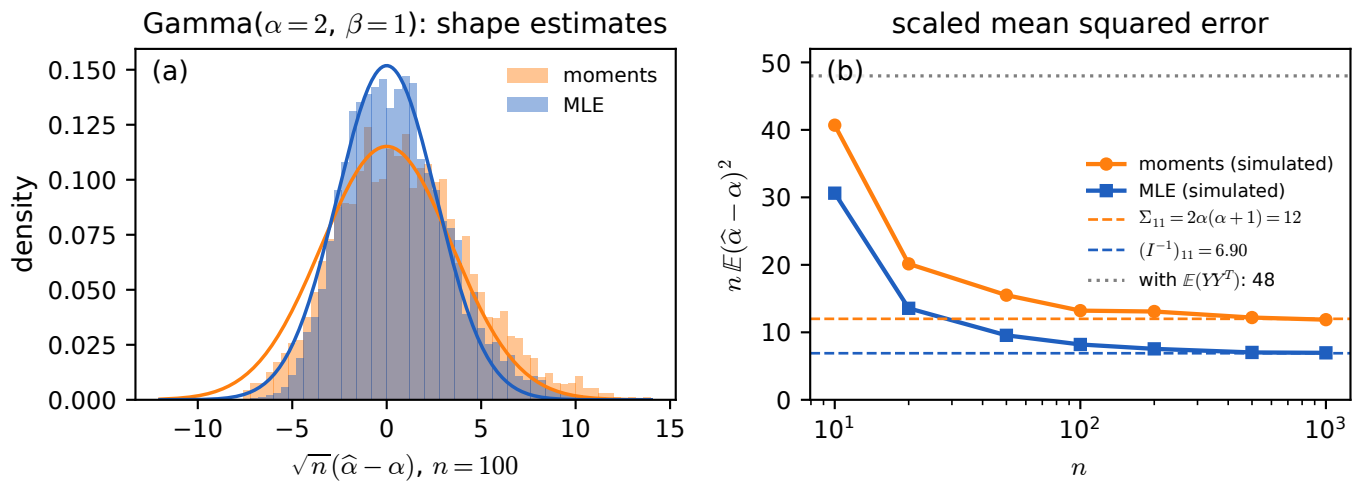

Gamma($\alpha = 2$, $\beta = 1$): shape estimates
(a)
moments
MLE
density
0.150
0.125
0.100
0.075
0.050
0.025
0.000
−10
−5
0
5
10
15
$\sqrt{n}(\widehat{\alpha} - \alpha)$, $n = 100$
scaled mean squared error
(b)
$n\,\mathbb{E}(\widehat{\alpha} - \alpha)^2$
50
40
30
20
10
0
moments (simulated)
MLE (simulated)
$\Sigma_{11} = 2\alpha(\alpha+1) = 12$
$(I^{-1})_{11} = 6.90$
with $\mathbb{E}(YY^T)$: 48
10^1
10^2
10^3
n