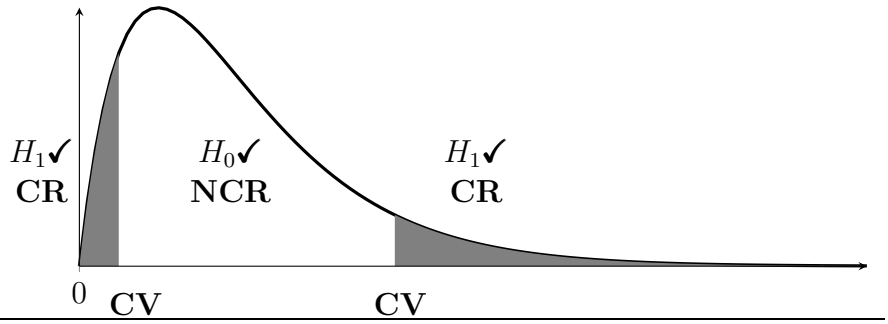
Hypothesis Testing

One Population Standard Deviation

Two–Tail Test:

$H_0 : \sigma = \sigma_0$

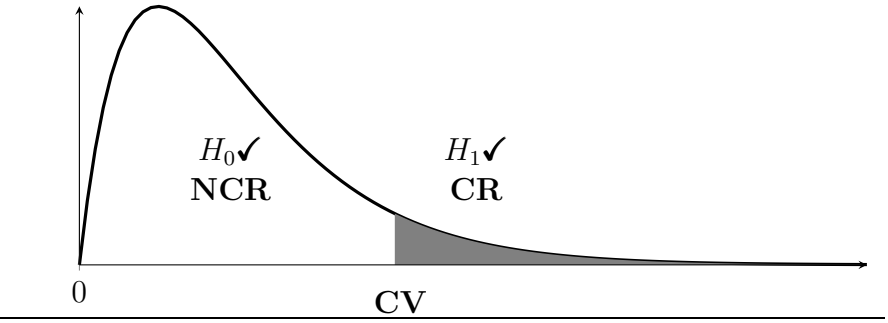
$H_1 : \sigma \neq \sigma_0$



Right–Tail Test:

$H_0 : \sigma \leq \sigma_0$

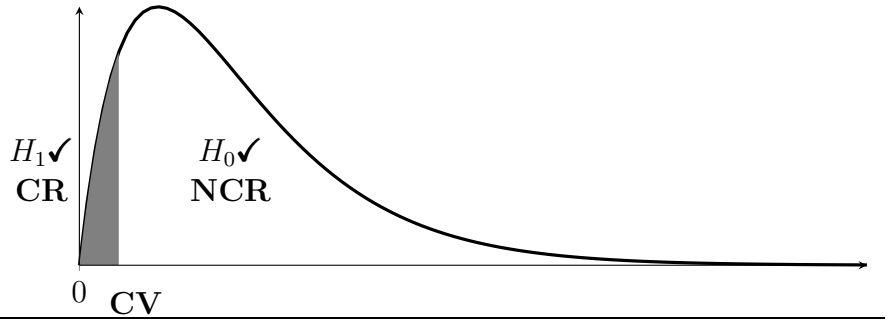
$H_1 : \sigma > \sigma_0$



Left–Tail Test:

$H_0 : \sigma \geq \sigma_0$

$H_1 : \sigma < \sigma_0$



Computed Test Statistic & P–Value:

- Using formula for C.T.S.: $\chi^2 = \dfrac{(n-1)s^2}{\sigma^2}$
- Using TI option $\chi^2cdf($ with $\boxed{df = n-1}$ for P–Value: 2ND > VARS > $\chi^2cdf($ > ENTER
  - ∗ Right–Tail–Test: $\chi^2cdf(\chi^2, E99, df)$
  - ∗ Left–Tail–Test: $\chi^2cdf(0, \chi^2, df)$
  - ∗ Two–Tail–Test: Find both right tail and left tail, multiply the smaller one by 2
