

01

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导入数据

```
library(tidyverse)
data <- data.frame(
  x1 = c(3.7,5.7,3.8,3.2,3.1,4.6,2.4,7.2,6.7,5.4,3.9,4.5,3.5,4.5,1.5,8.5,4.5,6.5,4.1,5.5),
  x2 = c(48.5,65.1,47.2,53.2,55.5,36.1,24.8,33.1,47.4,54.1,36.9,58.8,27.8,40.2,13.5,56.4,71.6,52.8,44.1,48.9),
  x3 = c(9.3,8.0,10.9,12.0,9.7,7.9,14.0,7.6,8.5,11.3,12.7,12.3,9.8,8.4,10.1,7.1,8.2,10.9,11.2,9.4)
)
data %>% head(5)
```

```
##      x1    x2    x3
## 1 3.7 48.5   9.3
## 2 5.7 65.1   8.0
## 3 3.8 47.2  10.9
## 4 3.2 53.2  12.0
## 5 3.1 55.5   9.7
```

分析

```
library(ICSNP)
mu0 <- c(4, 50, 10)
result <- HotellingsT2(data, mu=mu0)
print(result)
```

```
##
## Hotelling's one sample T2-test
```

```
##  
## data: data  
## T.2 = 2.9045, df1 = 3, df2 = 17, p-value = 0.06493  
## alternative hypothesis: true location is not equal to c(4,50,10)
```

p值0.06493, 不能拒绝原假设