A25_Hoermann

```
library(lattice)
library(latticeExtra)
```

```
## Loading required package: RColorBrewer
```

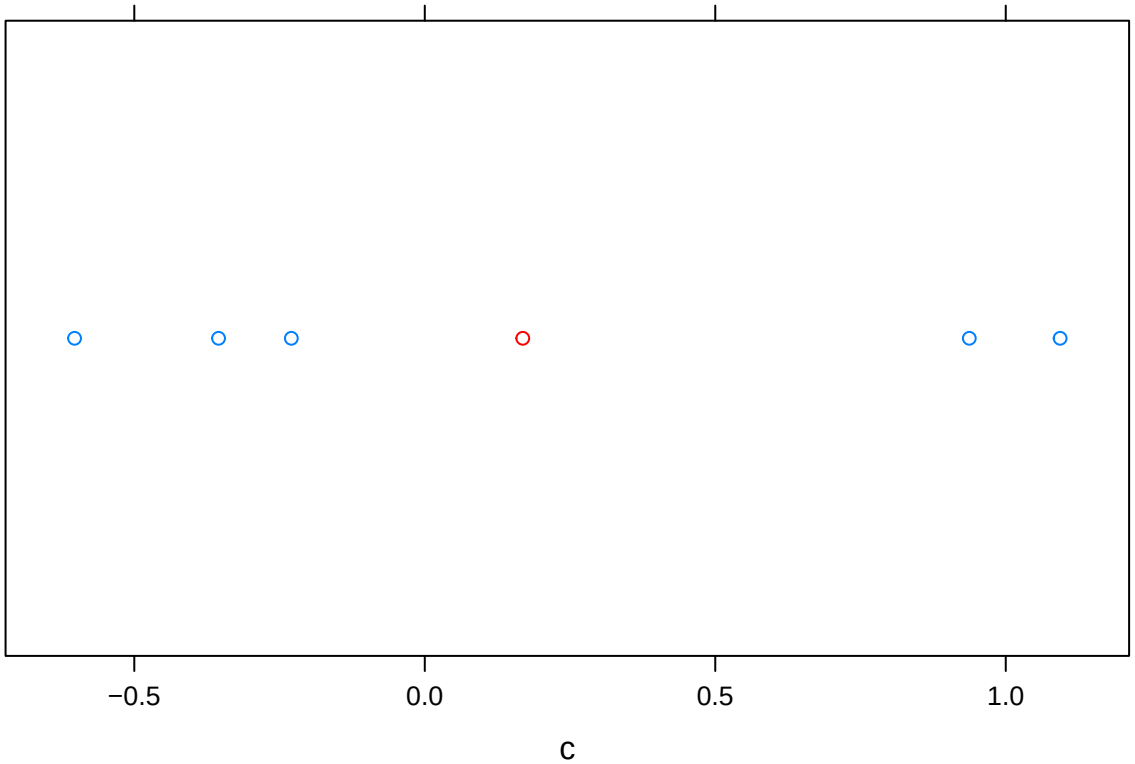
```
c = sort(rnorm(5))
c
```

```
## [1] -0.6028468 -0.3549893 -0.2297040  0.9372599  1.0936144
```

1. unbiasedness
2. efficiency
3. consistency
4. sufficiency
5. robustness

arithmetic mean

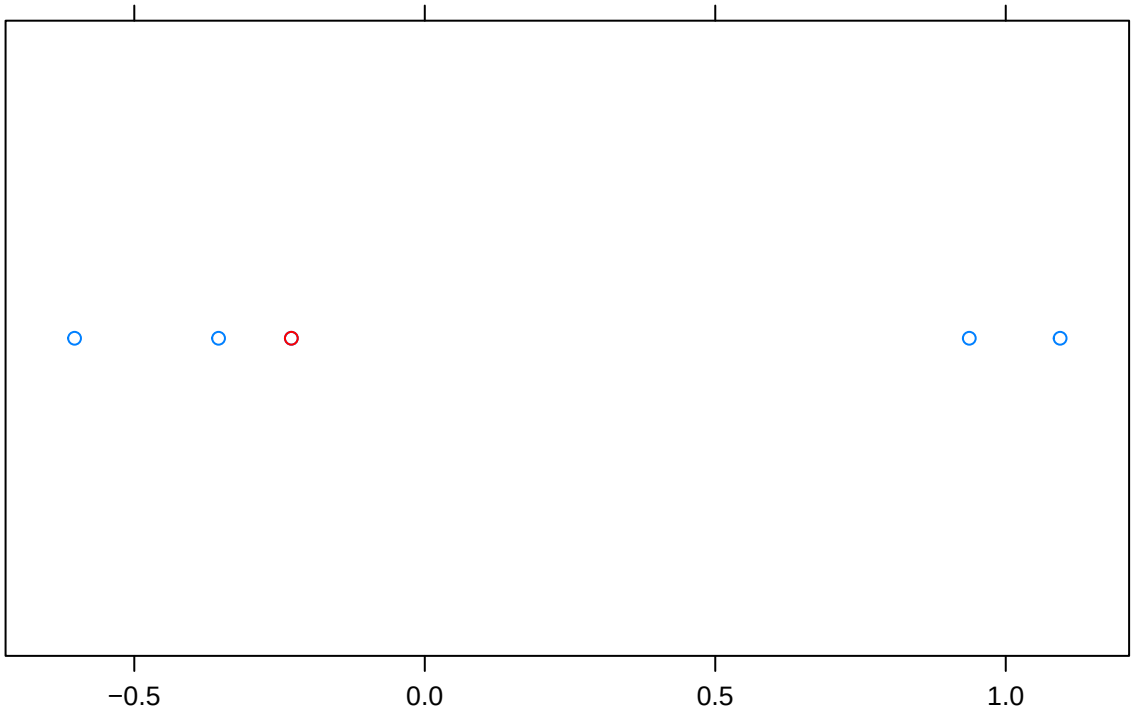
```
stripplot(c) + as.layer(stripplot(mean(c), col = "red"))
```



1. unbiased 2. efficient 3. consistent 4. very sufficient, every x is considered 5. outlayers: problem, not robust

median

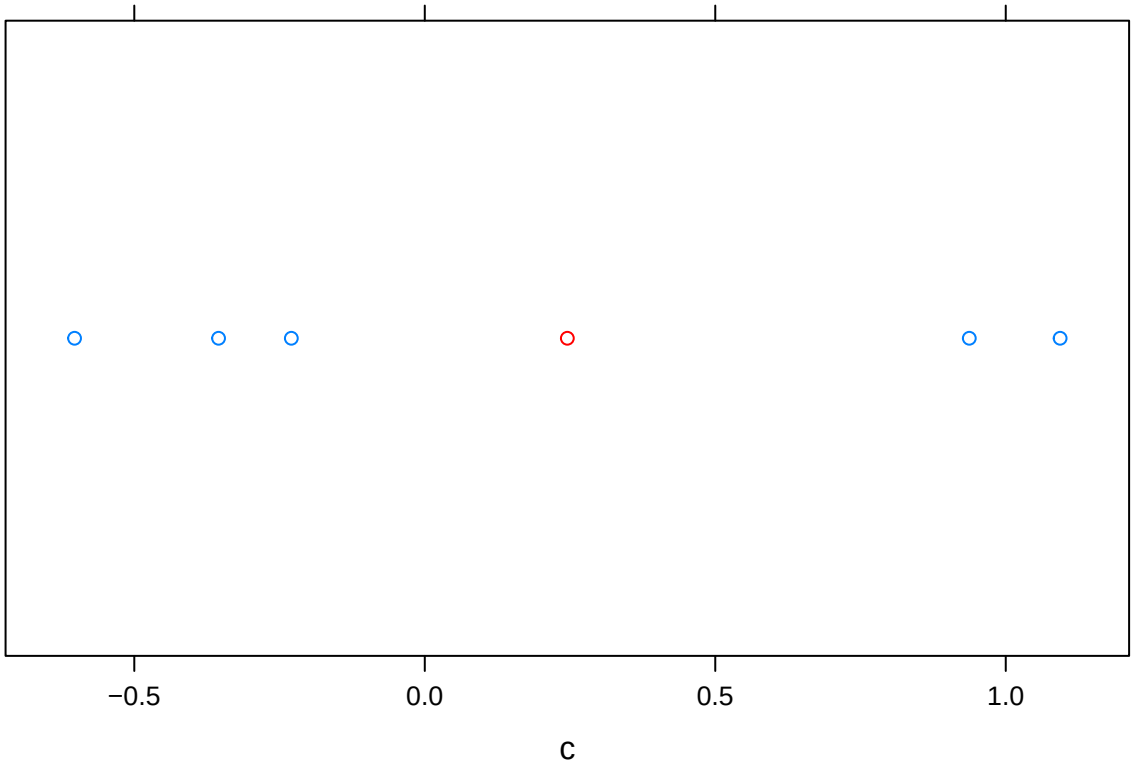
```
stripplot(c) + as.layer(stripplot(median(c), col = "red"))
```



1. biased 2. efficient 3. consistent 4. very insufficient, only one value is considered (and its ordinal pos) 5. outlayers are not a problem, more robust than arith. mean

midrange

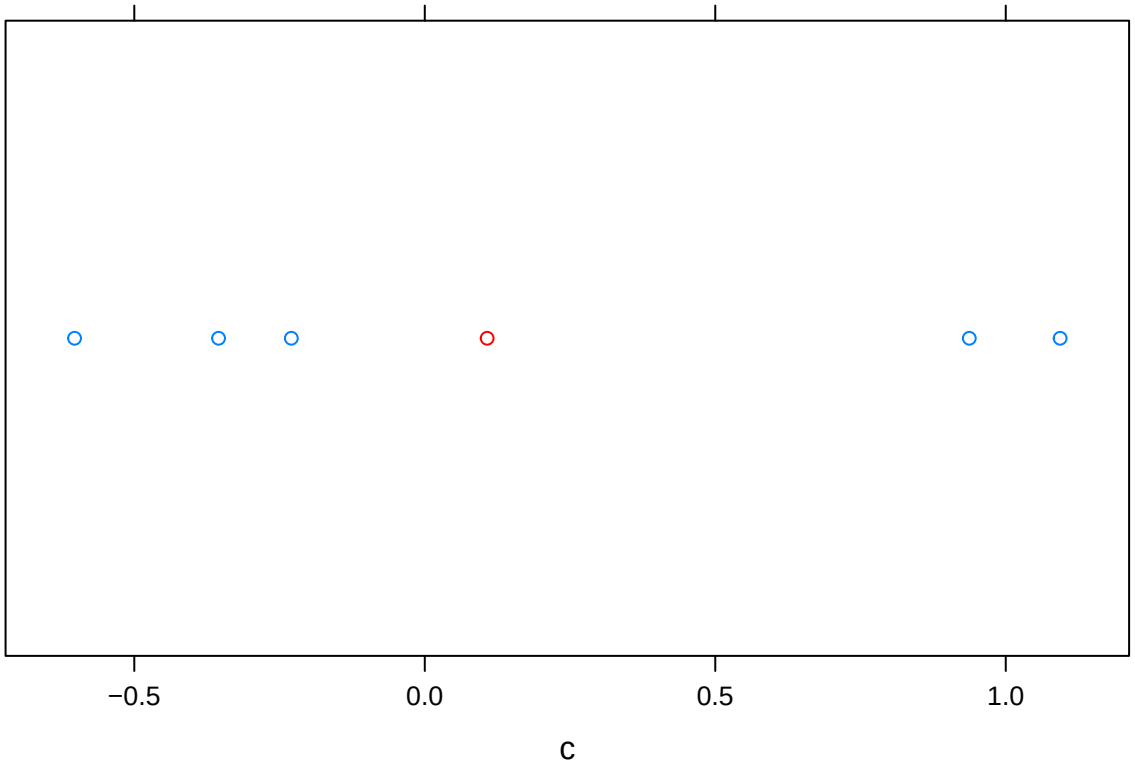
```
est = (c[1] + c[5]) / 2
stripplot(c) + as.layer(stripplot(est, col = "red"))
```



1. biased 2. inefficient 3. consistent 4. also rather insufficient 5. not so robust

5 values, sorted & weighted

```
est = sum(c(1:3,2:1) * c) / 9
stripplot(c) + as.layer(stripplot(est, col = "red"))
```



1. biased 2. inefficient 3. inconsistent 4. sufficient, every x is considered 5. rather robust, outlayers have low weight