

# A12\_\_Hoermann

*Paul Hörmann*

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## Function definition

```
i = c(1:10000)
x = c(1:9)
calcor <- function(i) {
  y = sample(x, 9);
  cor(x, y, method="kendall")
}
rk = sapply(i, calcor)
```

## Summary

```
summary(rk)
```

```
##      Min.    1st Qu.      Median        Mean     3rd Qu.      Max.
## -0.8333333 -0.1666667  0.0000000 -0.0006222  0.1666667  0.8333333
```

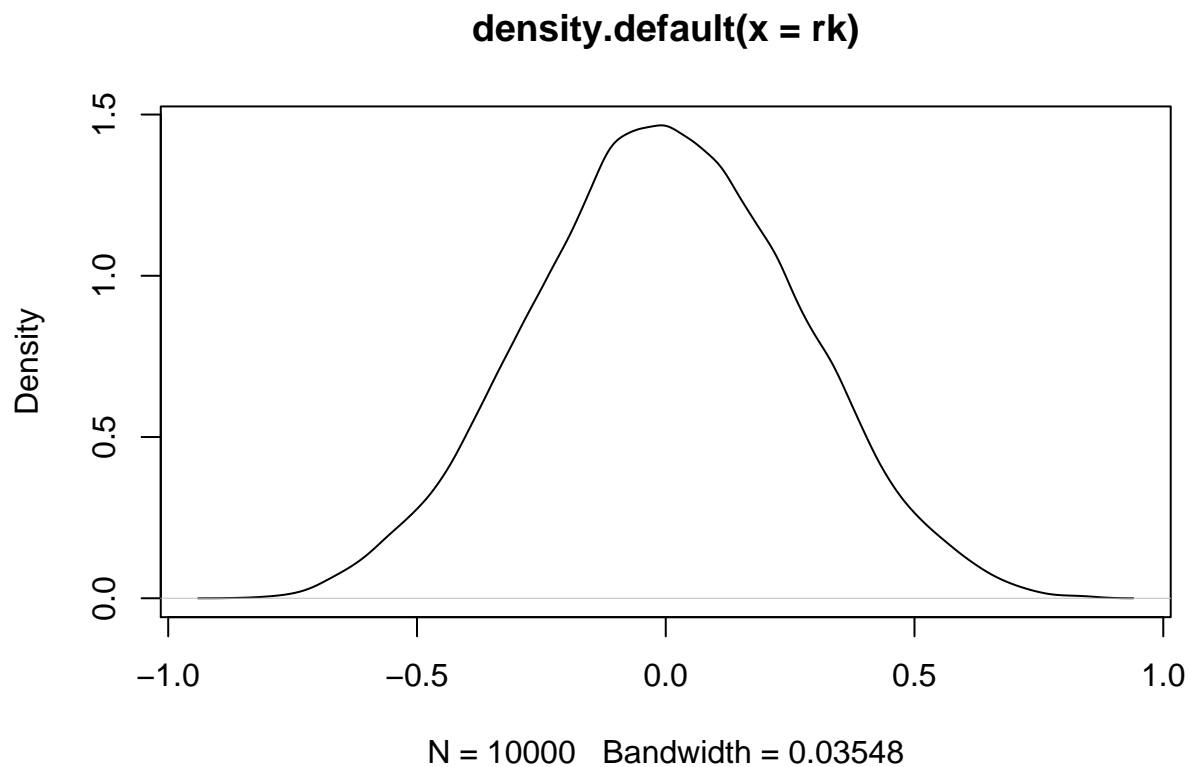
## Standard deviation

```
sd(rk)
```

```
## [1] 0.2639148
```

## Density plot

```
plot(density(rk))
```



### Transform values

```
transform <- function(i) {  
  0.5 * log((1 + i) / (1 - i))  
}  
rkt = sapply(rk, transform)
```

### Summary

```
summary(rkt)
```

```
##      Min.    1st Qu.      Median        Mean     3rd Qu.      Max.  
## -1.1989476 -0.1682361  0.0000000 -0.0005409  0.1682361  1.1989476
```

### Standard deviation

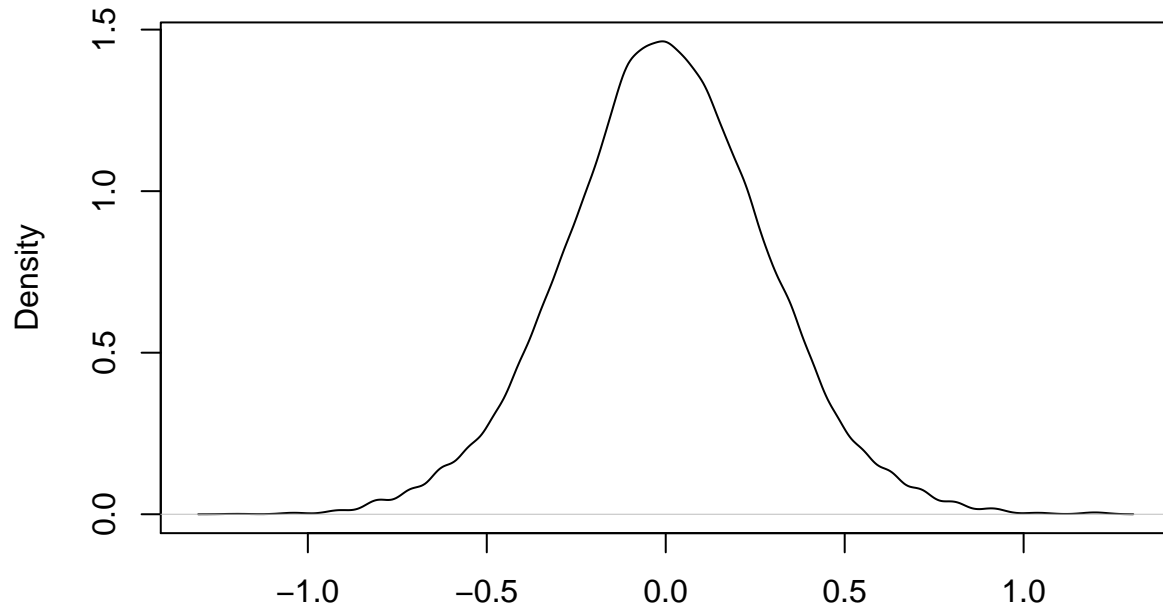
```
sd(rkt)
```

```
## [1] 0.2853784
```

### Density plot (original scaling)

```
plot(density(rkt))
```

**density.default(x = rkt)**

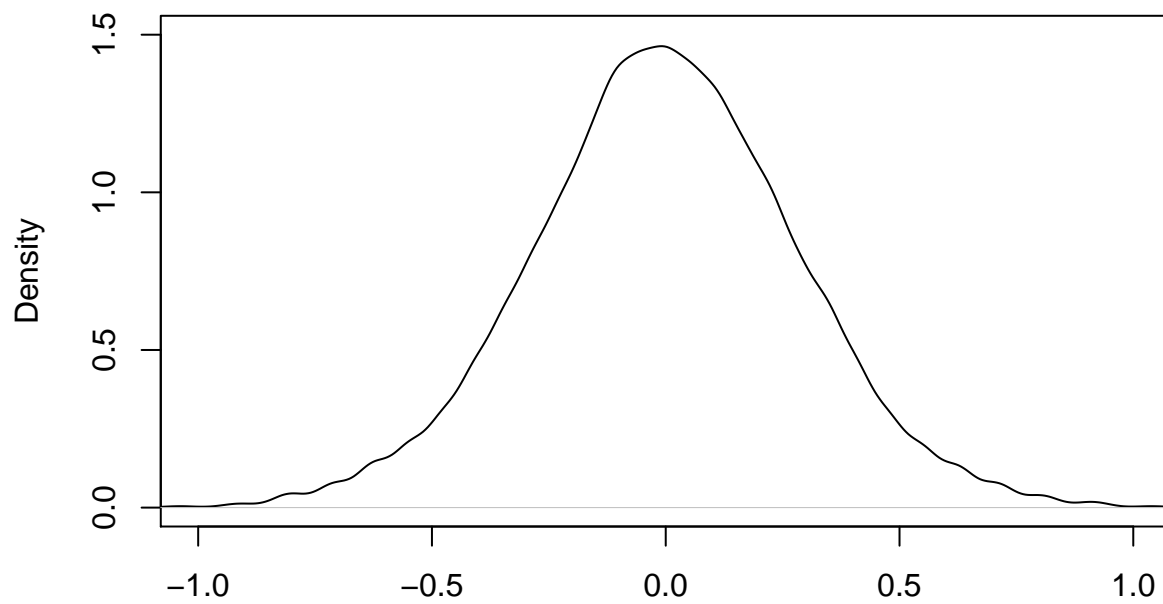


N = 10000 Bandwidth = 0.03582

Density plot (adjusted scaling)

```
plot(density(rkt), ylim=c(0,1.5), xlim=c(-1, 1))
```

**density.default(x = rkt)**



N = 10000 Bandwidth = 0.03582

Same conclusion as in previous example, flattening of distribution.