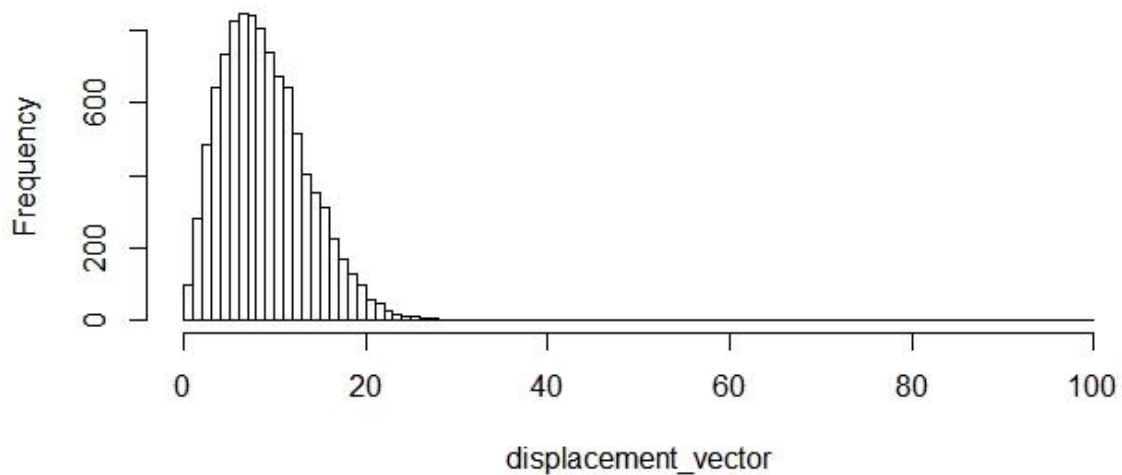


Histogram of displacement_vector



Code in R->

```
> x_coord_vector=c()
> y_coord_vector=c()
> for(trials in 1:10000){
+   random_angle=runif(100)
+   random_angle = random_angle*2*pi
+   y_coord = 0
+   x_coord = 0
+   for(single_step in random_angle){
+     x_coord = x_coord + cos(single_step)
+     y_coord = y_coord + sin(single_step)
+   }
+   x_coord_vector = c(x_coord_vector , x_coord)
+   y_coord_vector = c(y_coord_vector , y_coord)
+ }
> displacement_vector = sqrt(x_coord_vector*x_coord_vector + y_coord_vector*
r*y_coord_vector)
> hist(displacement_vector, breaks=seq(from=0, to=100, by=1))
```

Median

```
> median(displacement_vector)
[1] 8.316138
```

Standard Deviation

```
> sd(displacement_vector)
[1] 4.656469
```

Mean

```
> mean(displacement_vector)
[1] 8.863233
```

Maximum

```
> max(displacement_vector)
[1] 29.34297
```

Minimum

```
> min(displacement_vector)
[1] 0.1156972
```