Tarea Corta Nº1

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Introduction

In a famous paper, @BC64 introduced a family of transformations …

```
library(tidyverse)
```

```
Warning: package 'ggplot2' was built under R version 4.2.3
```

```
Warning: package 'tidyr' was built under R version 4.2.3
```

```
Warning: package 'dplyr' was built under R version 4.2.3
```

```
-- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
v dplyr     1.1.4     v readr     2.1.4
v forcats   1.0.0     v stringr   1.5.0
v ggplot2   3.5.1     v tibble    3.2.1
v lubridate 1.9.2     v tidyr     1.3.1
v purrr     1.0.2
-- Conflicts ------------------------------------------ tidyverse_conflicts() --
x dplyr::filter() masks stats::filter()
x dplyr::lag()    masks stats::lag()
i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to
```

```
set.seed(2022-12-20)
df <- tibble(x = rnorm(200))
df |>
  ggplot(aes(x=x)) +
  geom_density(bw = "SJ") +
  geom_rug()
```

```
Warning: Computation failed in `stat_density()`.
Caused by error in `precompute_bw()`:
```

```
! `bw` must be one of "nrd0", "nrd", "ucv", "bcv", "sj", "sj-ste", or
  "sj-dpi", not "SJ".
i Did you mean "sj"?
```

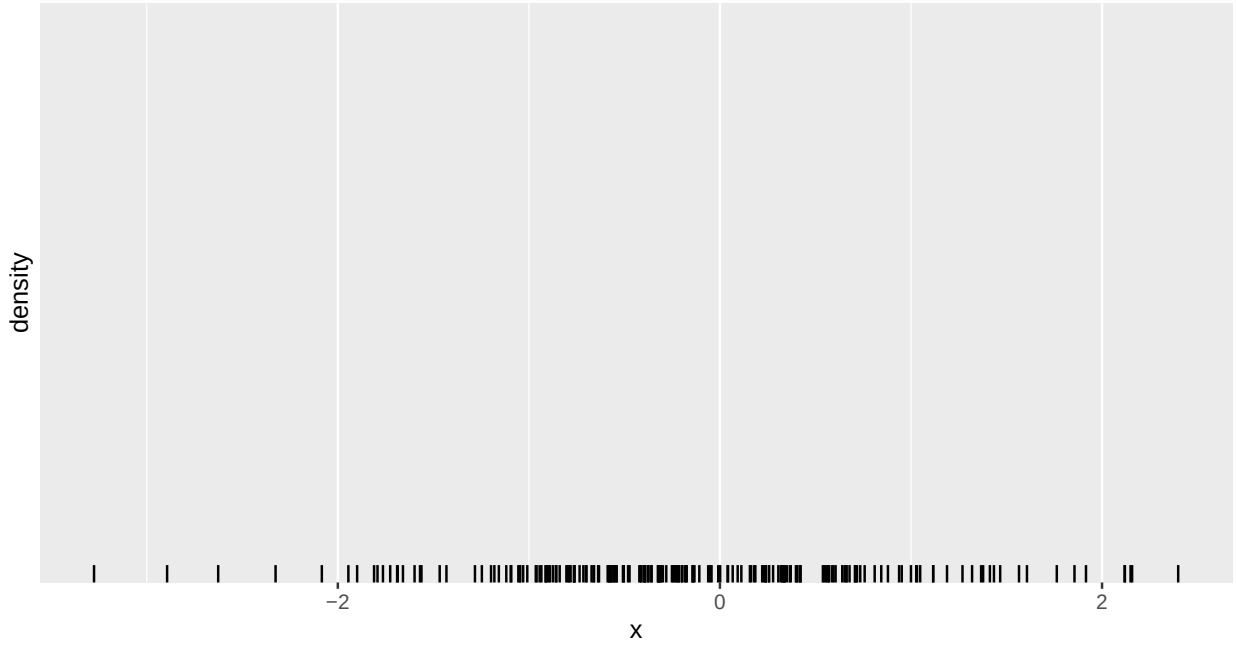

Figura 1: Simulated data from a N(0,1) distribution.

Figura 1 shows a kernel density estimate of simulated data from a N(0,1) distribution. The sample variance is given by

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2 = 0.98. \tag{1}$$

Note that Ecuación 1 is an unbiased estimate of the variance, but it is not the maximum likelihood estimate [@Rice2007, p.269].