CDF RSSI

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October 2, 2019

```
### get data and calculate key summary statistics
# extract "Ozone" data vector for New York
#ozone = airquality$Ozone
# calculate the number of non-missing values in "ozone"
#n = sum(!is.na(ozone))
data <- read.table("C:/Users/Robin/Desktop/LoRaWAN/lpdata.csv", header = TRUE, sep = ",")
head(data)
```

```
##   No.of.observation Through Throughput RSSI SNR Header.Size Delay Jitter
## 1                 1      26        208   NA  NA          NA    NA     NA
## 2                 2      26        208 -201  -8          NA    NA     NA
## 3                 3      26        208 -121  -5          NA    NA     NA
## 4                 4      23        184   NA  NA          NA    NA     NA
## 5                 5      23        184   NA  NA          NA    NA     NA
## 6                 6      21        168 -201  -5          NA    NA     NA
```

```
data_1= data$RSSI

n = sum(!is.na(data_1))

summary(fivenum(data_1))
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  -208.0  -205.0  -201.0  -165.2  -109.0  -103.0
```

```
### empirical cumulative distribution function using sort() and plot()

# ordering the ozone data
data.ordered = sort(data_1)
head(data.ordered)
```

```
## [1] -208 -207 -206 -206 -205 -205
```

```
png('C:/Users/Robin/Desktop/LoRaWAN/RSSI1.png',width = 300, height = 300, units = "px", bg = "white")

# plot the possible values of probability (0 to 1) against the ordered ozone data (sample quantiles of
# notice the option type = 's' for plotting the step functions
plot(data.ordered, (1:n)/n, type = 'o', ylim = c(0, 1), xlab = 'RSSI', ylab = 'CDF', main = 'Empirical
#ggplot(data.ordered) + stat_ecdf(geom = "step", pad = FALSE)
# mark the 3rd quartile
#abline(v = 62.5, h = 0.75)

# add a legend
#legend(65, 0.7, '3rd Quartile = 63.5', box.lwd = 0)

# add the label on the y-axis
#mtext(text = expression(hat(F)[n](x)), side = 2, line = 2.5)

dev.off()
```

```
## pdf
##   2
```