

# On how our data may look like

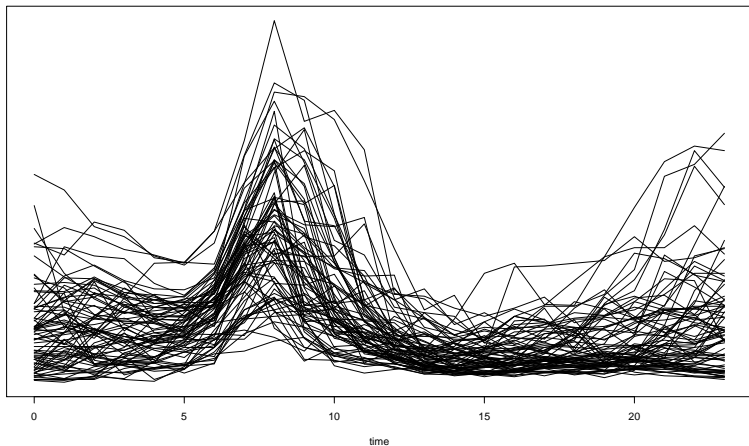
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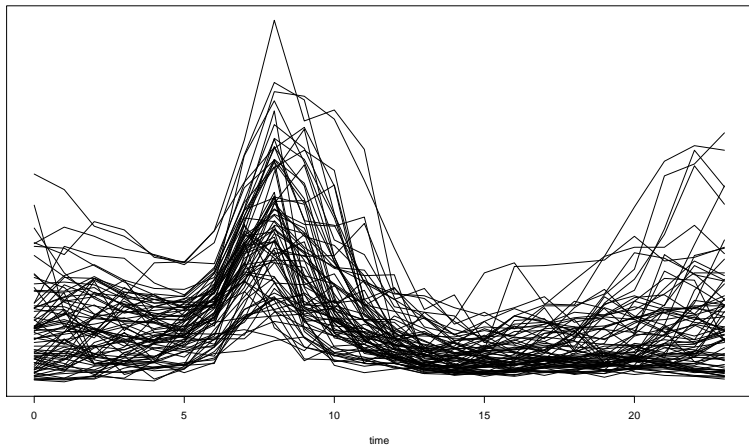
# A data set

What is the nature of this data set?



# A functional data set

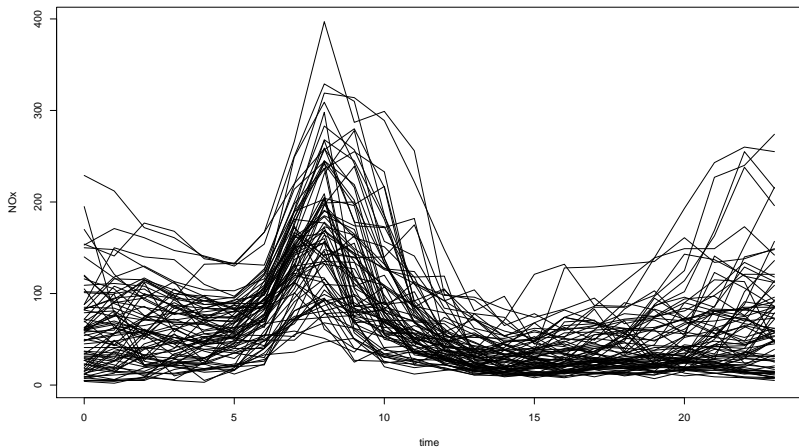
It is a functional data set  $\rightarrow$  *Functional Data Analysis*



# What does this data set describe?

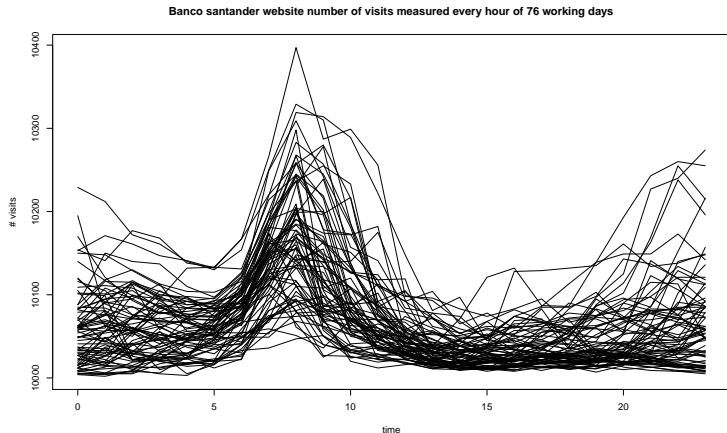
## NO<sub>x</sub> levels

NO<sub>x</sub> levels measured every hour of 76 working days in a Barcelona's area



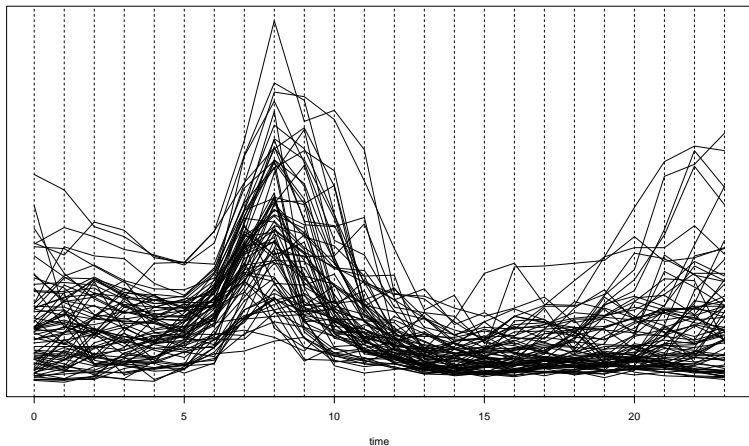
# With a bit of imagination...

Number of visits of a website (e.g., Banco Santander) measured every hour

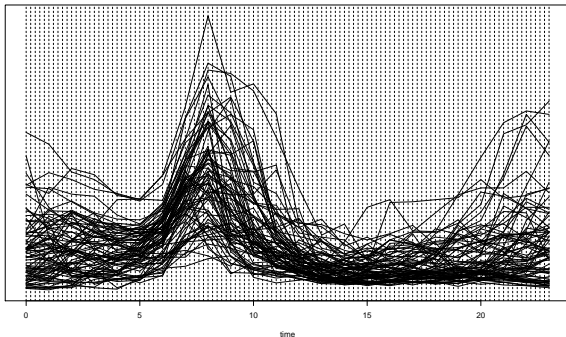


**1) Functional data are of interest to this Institute**

$n = 76, p = 24$

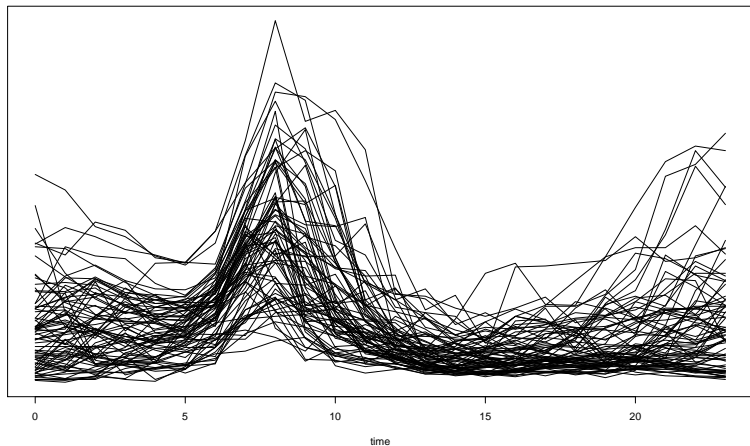


(structured) high-dimensional data set  $\rightarrow$  *High-Dimensional Data Analysis*



**2) Structured and unstructured high-dimensional data are of interest to this Institute**

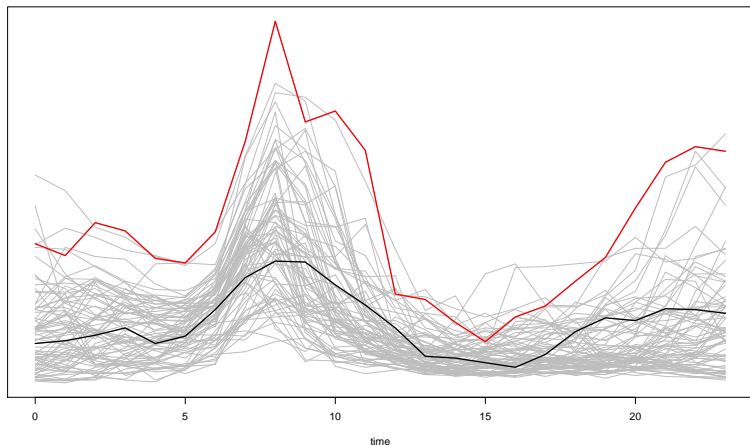
# Median? Potential outliers?



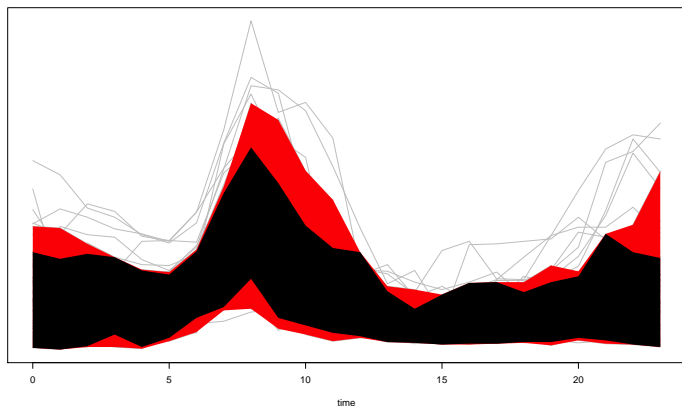


# Depth-based median and potential outlier

Using our proposal of functional depth, the kernelized functional spatial depth (KFSD).



## KFSD-based central regions



- 3) The notion of depth might be extended to data coming from a Big Data environment

# Where you can find me...

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