



Water softener detection in a building water consumption dataset

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Dataset: dates and hours

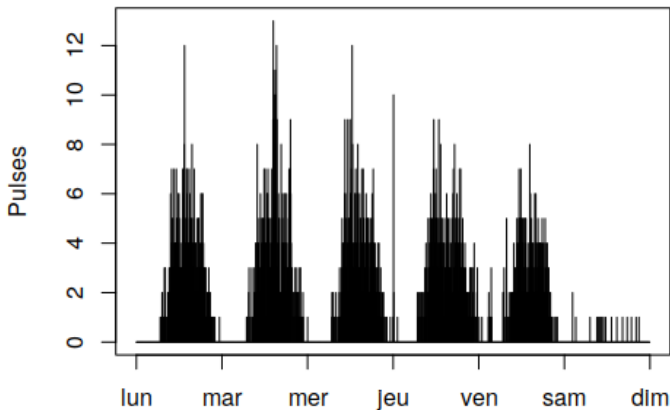
Language used: **R**

2 main operations with the dates

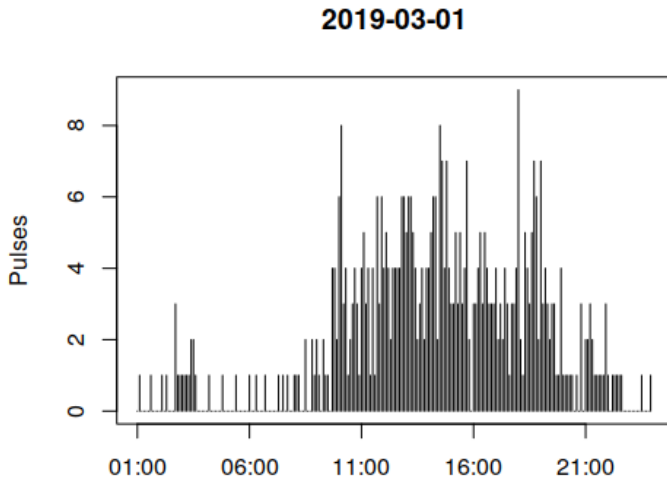
- Convert the strings to dates (package *lubridate*)
- Convert UTC time to CET time
- Daylight saving time?

Dataset : Typical week

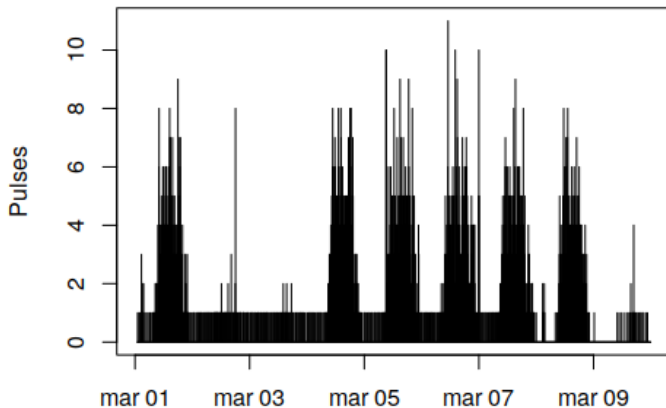
25/03 - 31/03/2019



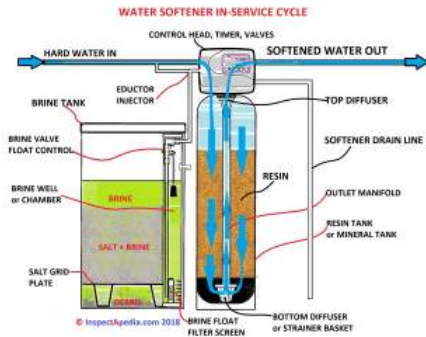
Dataset : first vizualization



First week of March



Water softener regeneration

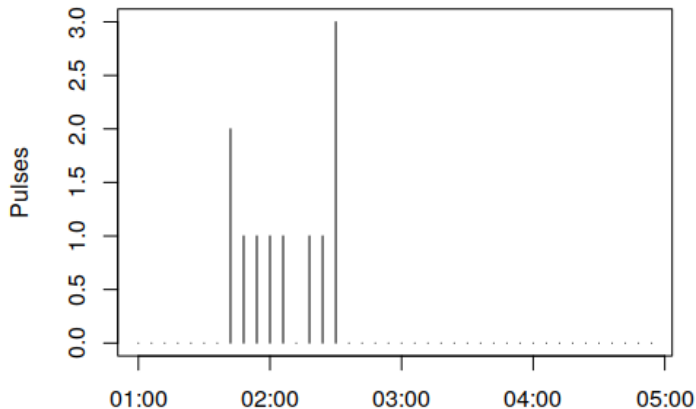


Régénération:

- Backwash
- Brine draw
- Slow rinse
- Fast rinse

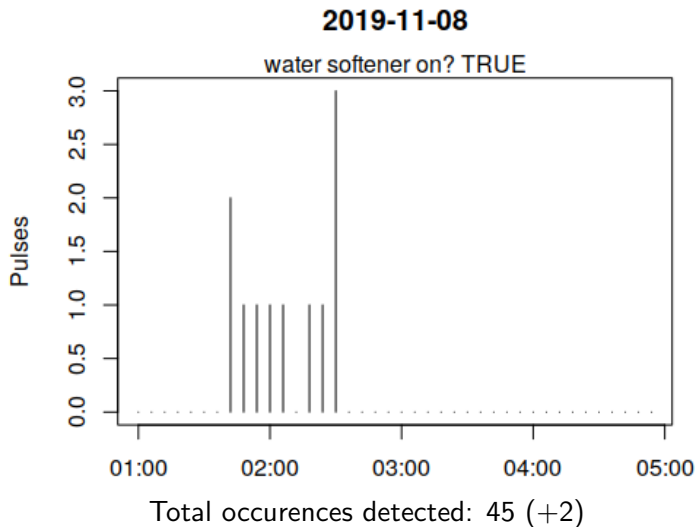
Water softener

2019-11-08

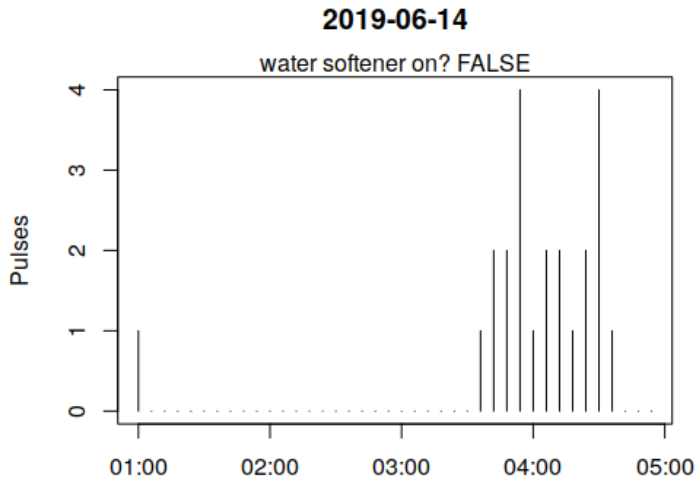


Algorithm

- Detect first peak
- Detect second peak
- Check continuous consumption

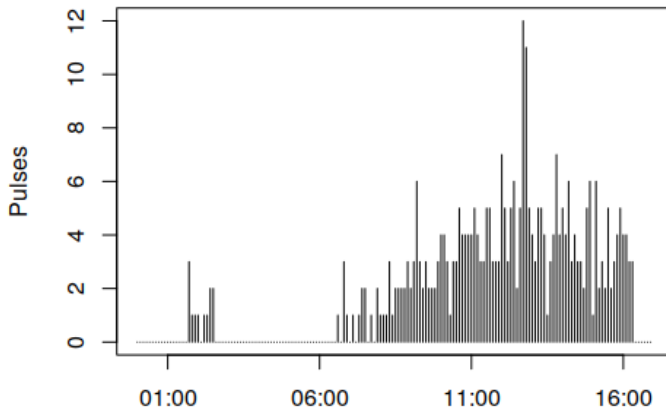


Discussion: False Negative



Discussion: False Positive

2020-02-28



Alternative approach

- List of water softener signal
- Unknown signal - water softener signal
- if result equal 0 : probably a water softener
- if not:
 - water softener + other use
 - other use

Thank you

Questions?