

# Algorithm using wpd values for clustering 8 households

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```
library(knitr)

## Warning: package 'knitr' was built under R version 4.0.2
library(tidyverse)

## Warning: package 'tidyverse' was built under R version 4.0.2
## -- Attaching packages ----- tidyverse 1.3.0 --
## v ggplot2 3.3.3      v purrr   0.3.4
## v tibble  3.1.0      v dplyr  1.0.5
## v tidyr   1.1.3      v stringr 1.4.0
## v readr   1.4.0      v forcats 0.5.1
## Warning: package 'ggplot2' was built under R version 4.0.2
## Warning: package 'tibble' was built under R version 4.0.2
## Warning: package 'tidyr' was built under R version 4.0.2
## Warning: package 'readr' was built under R version 4.0.2
## Warning: package 'dplyr' was built under R version 4.0.2
## Warning: package 'forcats' was built under R version 4.0.2
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
library(lubridate)

## Warning: package 'lubridate' was built under R version 4.0.2
##
## Attaching package: 'lubridate'
## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
library(lvplot)
#library(ggribes)
library(tsibble)

## Warning: package 'tsibble' was built under R version 4.0.2
##
## Attaching package: 'tsibble'
```

```
## The following object is masked from 'package:lubridate':  
##  
## interval
```

```
## The following objects are masked from 'package:base':  
##  
## intersect, setdiff, union
```

```
library(gravitas)  
library(ggpubr)
```

```
## Warning: package 'ggpubr' was built under R version 4.0.2
```

```
library(readr)  
library(kableExtra)
```

```
## Warning: package 'kableExtra' was built under R version 4.0.2
```

```
##  
## Attaching package: 'kableExtra'  
## The following object is masked from 'package:dplyr':  
##  
## group_rows
```

```
library(distributional)
```

```
## Warning: package 'distributional' was built under R version 4.0.2
```

```
library(ggplot2)  
library(sugrrants)
```

```
## Warning: package 'sugrrants' was built under R version 4.0.2
```

```
library(here)
```

```
## Warning: package 'here' was built under R version 4.0.2
```

```
## here() starts at /Users/sgup0008/Documents/paper-gracsR
```

```
library(ggplot2)  
library(patchwork)
```

```
## Warning: package 'patchwork' was built under R version 4.0.2
```

```
library(scales)
```

```
##  
## Attaching package: 'scales'  
## The following object is masked from 'package:purrr':  
##  
## discard
```

```
## The following object is masked from 'package:readr':  
##  
## col_factor
```

```
library(GGally)
```

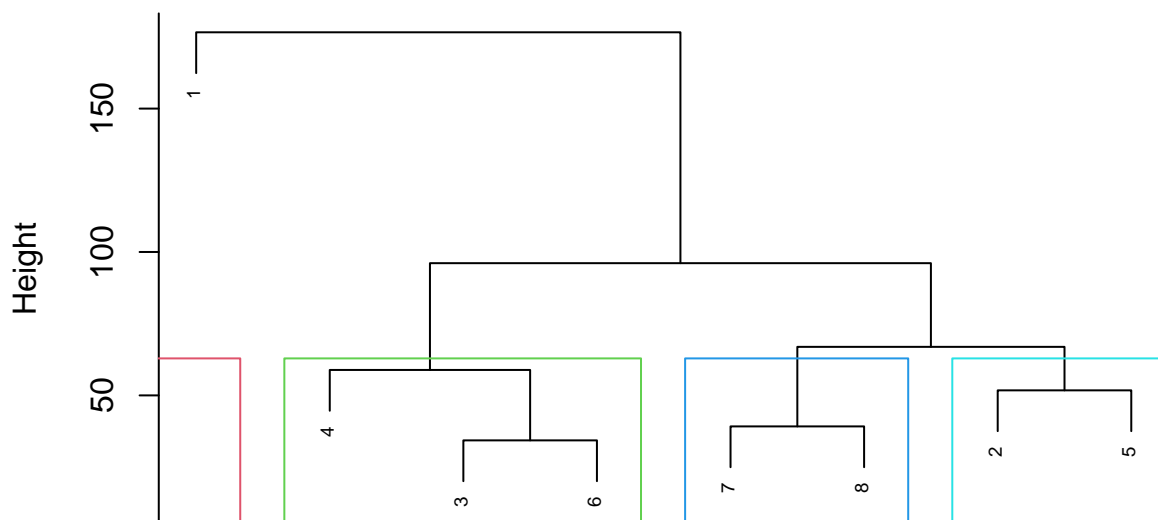
```
## Warning: package 'GGally' was built under R version 4.0.2
```

```
## Registered S3 method overwritten by 'GGally':
```

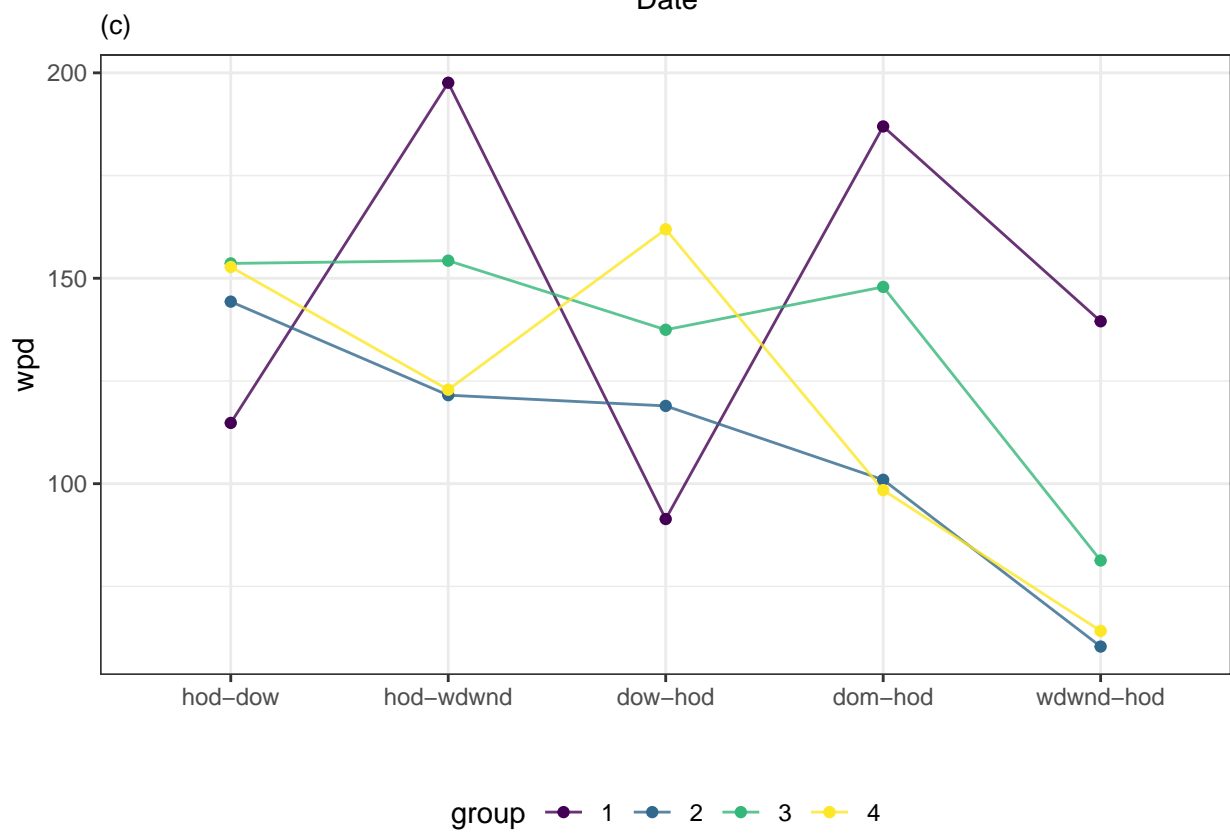
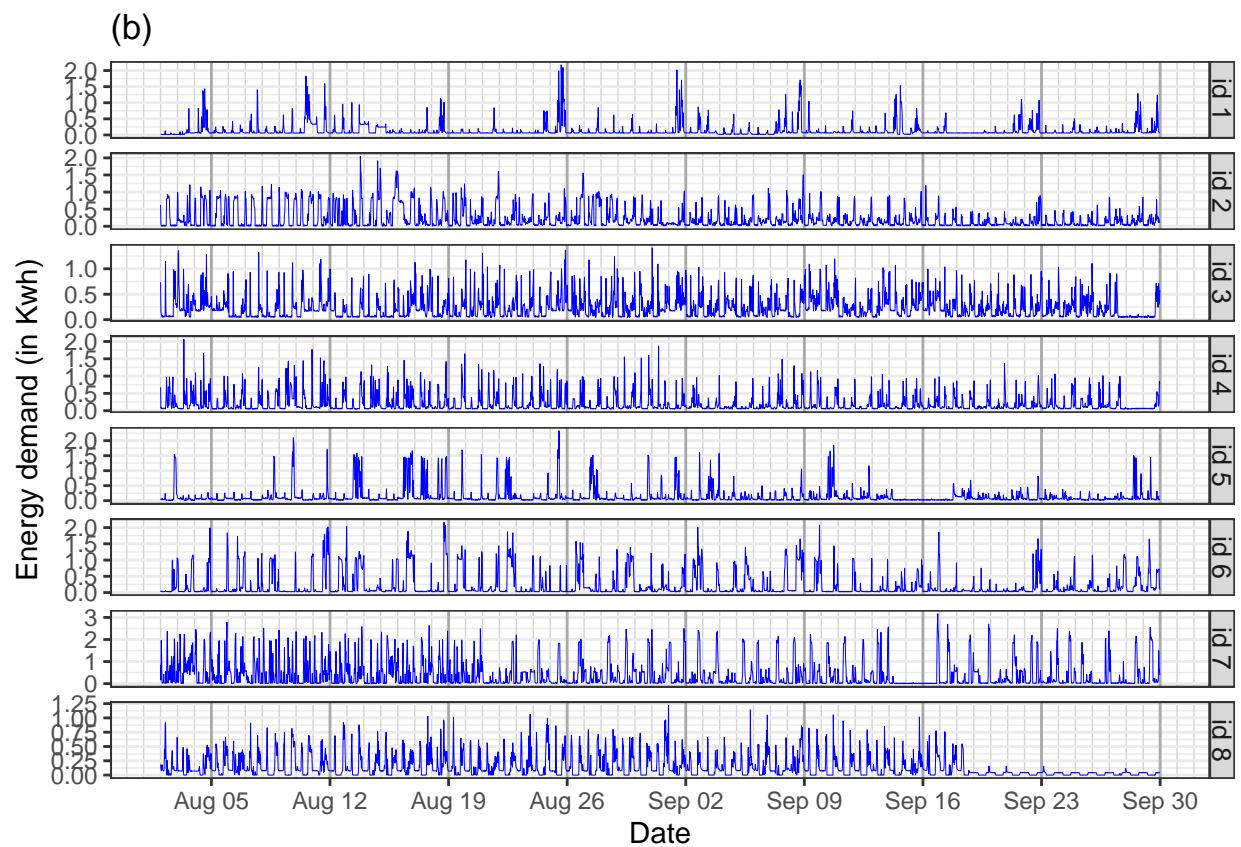
```
## method from
## +.gg ggplot2
library(viridis)
```

```
## Warning: package 'viridis' was built under R version 4.0.2
## Loading required package: viridisLite
##
## Attaching package: 'viridis'
## The following object is masked from 'package:scales':
##
## viridis_pal
```

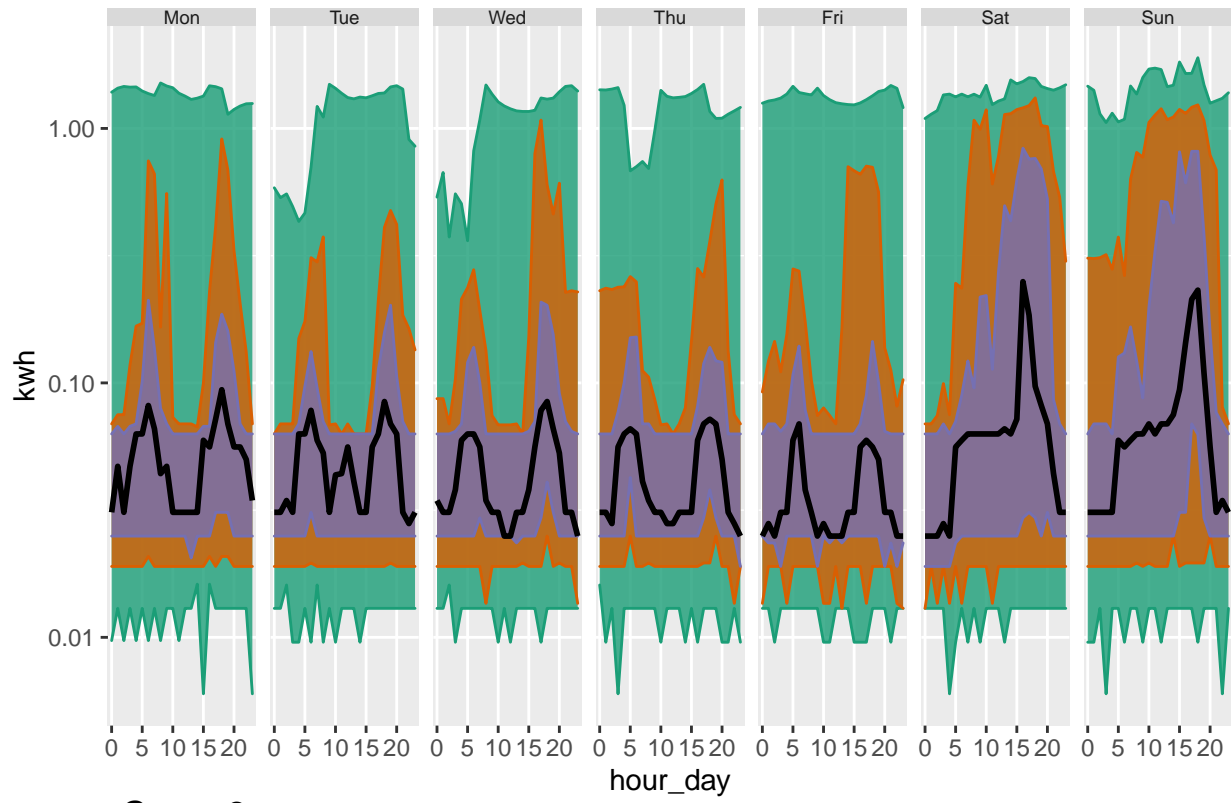
## Cluster Dendrogram



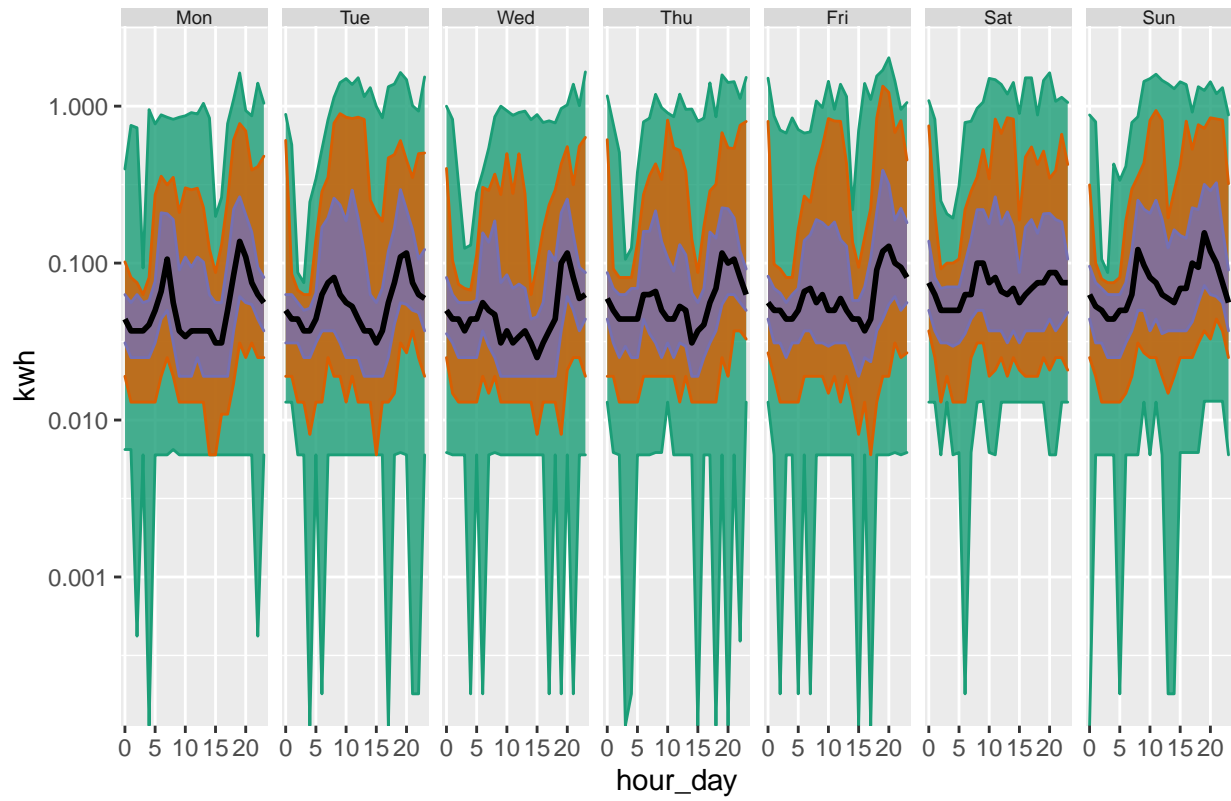
```
dist(data_clust[-1])
stats::hclust (*, "complete")
```



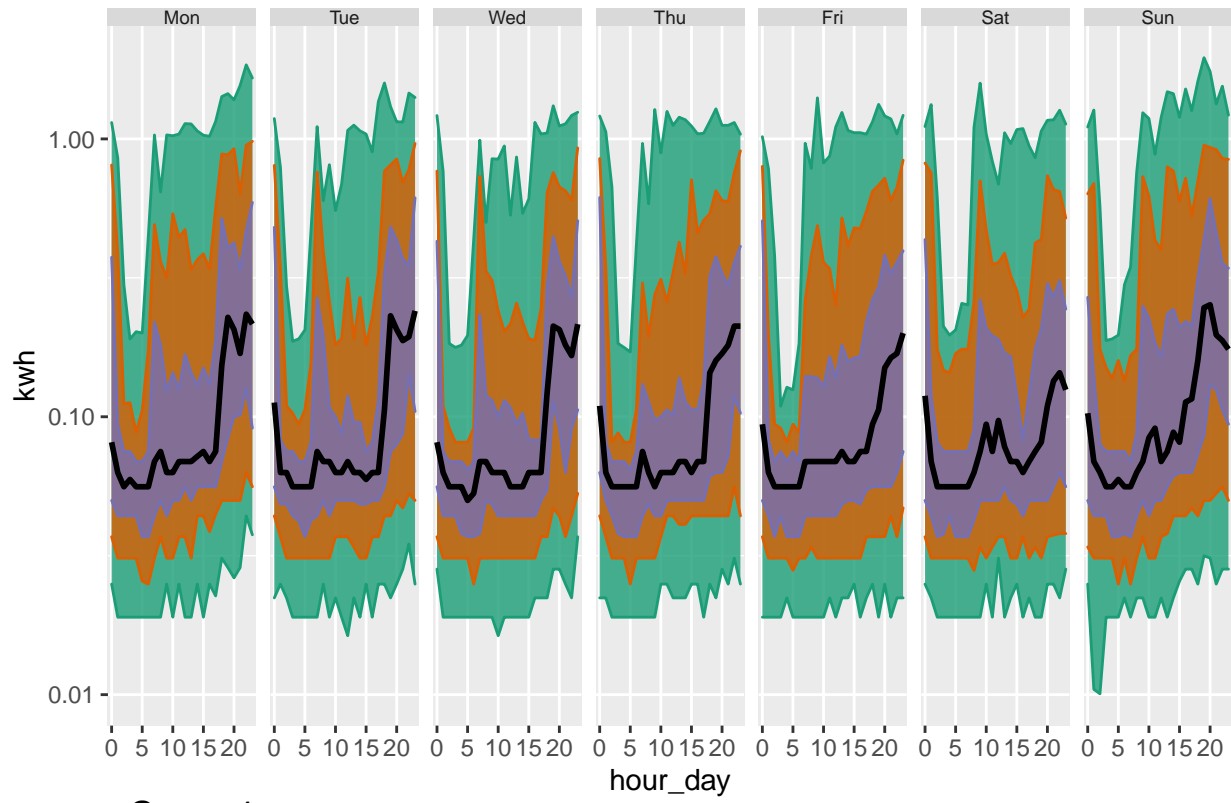
Group 1



Group 2



Group 3



Group 4

