Do any curves show “complete” emission?

Sasha D. Hafner

15 August, 2024

```
rm(list = ls())
library(data.table)
library(ggplot2)
```

Overview

Reviewer 1 asked about focusing on measurements where emission was complete. Do any fit that characterization?

Data

```
dat <- fread('../pars/data-subsets/ALFAM2_interval_sub1.csv.gz')
pdat <- fread('../pars/data-subsets/ALFAM2_plot_sub1.csv.gz')
```

Relative emission rate, fraction of applied TAN per hour. And relative emission in interval.

```
dat[, j.rel := j / tan.app]
dat[, eri := c(0, diff(er)), by = pmid]
```

Last interval.

```
dat[, cta.max := max(cta), by = pmid]
dat[, dt := c(0, diff(cta)), by = pmid]
ds <- dat[cta == cta.max, ]
```

```
table(ds$app.mthd, ds$j.rel > 0)
```

```
##
##        FALSE TRUE
##   bc      39  183
##   bsth    32  173
##   cs       2   11
##   os      38   89
##   ts      39  128
```

```
table(ds$j.rel > 0) / nrow(ds)
```

```
##
##     FALSE      TRUE
## 0.2043597 0.7956403
```

```
quantile(pdat$ct.max)
```

```
##        0%       25%       50%       75%      100%
```

```
##  24.00000  93.68725  96.57500 163.27500 650.50000
```

```
quantile(pdat$ct.max, 70:90 / 100)
```

```
##      70%      71%      72%      73%      74%      75%      76%      77%
## 145.5080 145.9500 146.5000 146.8072 160.2820 163.2750 164.5120 164.9800
##      78%      79%      80%      81%      82%      83%      84%      85%
## 165.2370 165.8605 166.5580 166.9000 167.1898 167.7617 167.9300 167.9505
##      86%      87%      88%      89%      90%
## 167.9700 168.0071 168.0800 168.1200 168.2370
```

```
quantile(ds$dt)
```

```
##         0%        25%        50%        75%       100%
##    0.25000   23.70000   24.80000   51.54825 1256.02000
```

```
quantile(ds$eri)
```

```
##        0%       25%       50%       75%      100%
## -0.172263  0.000090  0.006318  0.016705  0.148100
```

```
quantile(ds[eri > 0, eri])
```

```
##       0%      25%      50%      75%     100%
## 0.000005 0.003110 0.009630 0.021338 0.148100
```