

## Analyzer

The Analyzer extracts travel times from matched GPX files, analyzes them and estimates travel times.

### Usage

`analyzer [OPTIONS]+`

Options:

<code>--db=VALUE</code>	path to the travel times database
<code>--add</code>	adds specified tracks to the DB
<code>--track=VALUE</code>	path to the matched GPS track to process or to the directory to process
<code>--map=VALUE</code>	path to the routable map
<code>-a, --analyze</code>	analyzes travel times from the database
<code>-o, --output=VALUE</code>	path to the output directory
<code>-h, -?, --help</code>	

To extract travel times from the matched GPX tracks use

```
analyzer --db=PATH_TO_TRAVELTIMES_DB
         --add --track=PATH_TO_MATCHED_GPS_TRACK(S)
```

To analyze travel times use

```
analyzer --db=PATH_TO_TRAVELTIMES_DB --map=PATH_TO_ROUTABLE_MAP
         --output=OUTPUT_PATH --analyze
```

### Output

Analyzer creates a model for each road segment, that describes travel time. Model is time dependant -  $\tau$ .

$$T(\tau) = T_{ff} + D_c(\tau) + \|D_{ts}\|_p$$

$T(\tau)$       Travel time on segment at the time  $\tau$

$T_{ff}$         Free flow travel time

$D_c(\tau)$     Delay caused by congestion / heavy traffic at the time  $\tau$

$\|D_{ts}\|_p$    Delay caused by traffic signals, that occurs with probability  $p$

## Sample Output

```
<model node-from="322596181" node-to="322596171" way="29322860"
  freeflow="60.1" avg-delay="9.3"
  signals-delay="53.3" signals-prob="0.75">
  <traffic-delay from="04:30:00" to="05:30:00" day="Any" delay="8.8" />
  <traffic-delay from="05:30:00" to="08:45:00"
    day="Monday,Tuesday,Wednesday,Friday,Weekend" delay="8" />
  <traffic-delay from="05:30:00" to="08:45:00" day="Thursday" delay="18" />
  <traffic-delay from="08:45:00" to="11:45:00" day="Any" delay="6" />
  <traffic-delay from="13:45:00" to="21:15:00" day="Any" delay="10.2" />
</model>
```