

1 Creating Bursts

As described in the previous section, the relocations stored in the `ltraj` object are already divided into the different individuals. This partition is called a "burst". For analysing the data, there might be the need to create "sub-bursts" for each animal within your trajectory. For example, if the animals were only recorded during the day, the monitoring took place over two consecutive years or the time lag between the relocations differs remarkably, each accumulation of relocations can be defined as a different burst. Looking at those different parts separately might be necessary for different reasons. The function `cutltraj` splits the given bursts of your `ltraj` object into smaller bursts according to a specified criterion. In contrast, the function `bindltraj` combines the bursts of an object of class "ltraj" with the same attribute "id" to one unique burst. To find out if there are more missing values, you can plot the `ltraj` object. For that, you need to define the time interval you are looking at. [?]

In our example, the locations of the cougars were recorded every 3 hours, starting at 3 AM. The location at midnight is always missing. We now want to split the existing bursts (individuals) into "sub-bursts" where the time lag is smaller than 3 hours. To get an impression about the time lags we plotted the different bursts (individuals). "dt", the time between successive relocations is measured in seconds.

```
plotltr(xmpl.ltr, "dt/3600/3")
```

To cut our data at our desired interval, we need a function which defines "dt". Because we want to keep relocations which are only a few minutes "wrong", we added 10 extra minutes.

```
foo = function(dt) {return(dt > (3800*3))}
```

Then we split the object of class `ltraj` into smaller bursts using `cutltraj` and the function above. The bursts we had before applying this function still remain.

```
xmpl.cut <- cutltraj(xmpl.ltr, "foo(dt)", nextr = TRUE)
```

There are two options of cutting the trajectory depending on `nextr`. If it is set as `FALSE`, the burst stops before the first relocation matching the criterion. If it is set as `TRUE`, it stops after. [?]