

# README

*ddd*

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## **cmpprocess**

cmpprocess is a toolkit for flexible modeling of count processes where data (over- or under-) dispersion exists. Estimations can be obtained under three data constructs where one has:

- (1) data on number of events in a single time unit,
- (2) only wait-time data, or
- (3) data on the number of events in an s-unit interval.

To use cmpprocess, one will first need to install the following two packages:

```
install.packages("compoisson")
install.packages("numDeriv")
```

One can install the latest released version of cmpprocess from CRAN with:

```
install.packages("cmpprocess")
```

## **Using cmpprocess**

To get started with cmpprocess right away, read the notes below. For a more detailed and technical description of COMPoisson processes, see Sellers et al. (2016).

The cmpprocess package houses 6 data sets (three phenomena each with a count and waiting time variant)

- floodcount, floodwait
- fetalcount, fetalwait
- particlecount, particlewait

For illustrative purposes, the CMPProcess codes are applied to analyze the Negro flood data set:

```
data(floodcount)
```

The key data structures for CMPProcess are a vector (or any ordered sequence) of counts or wait times

```
# Method 1
CMPProcess(floodcount$Counts)

# Method 2
## Assume the analyst knows the dispersion from the count data
CMPProcessWT(.8 , mean(floodwait$WT))

# Method 3
### collapse the floodcount data (into what size bin?)
SCMPProcess(bin_size, data)
```