

# Navigating through the R packages for movement

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useR! - July 2019



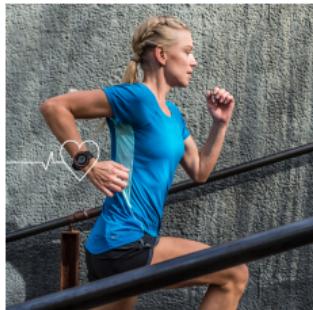
✉ [recio.joo@ufl.edu](mailto:recio.joo@ufl.edu)

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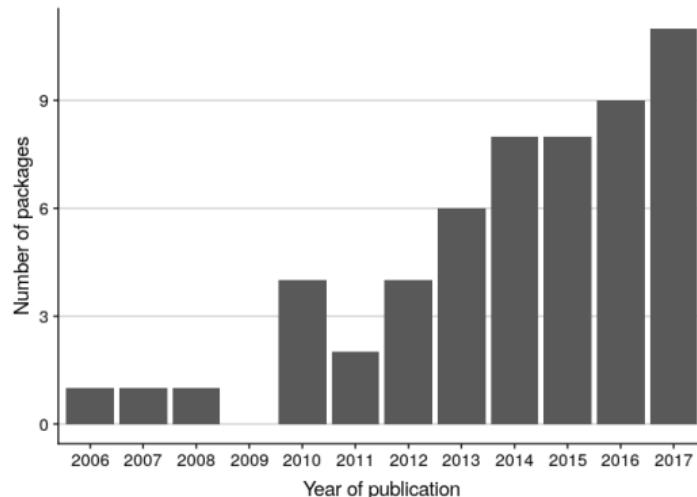
# Movement



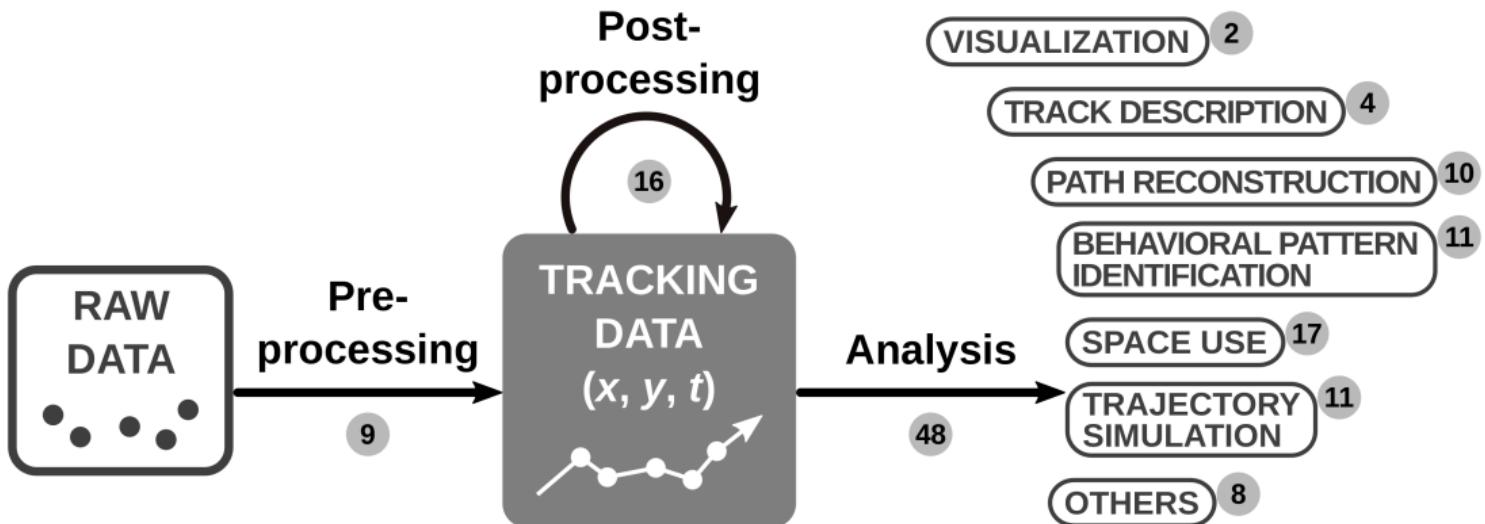
# Movement



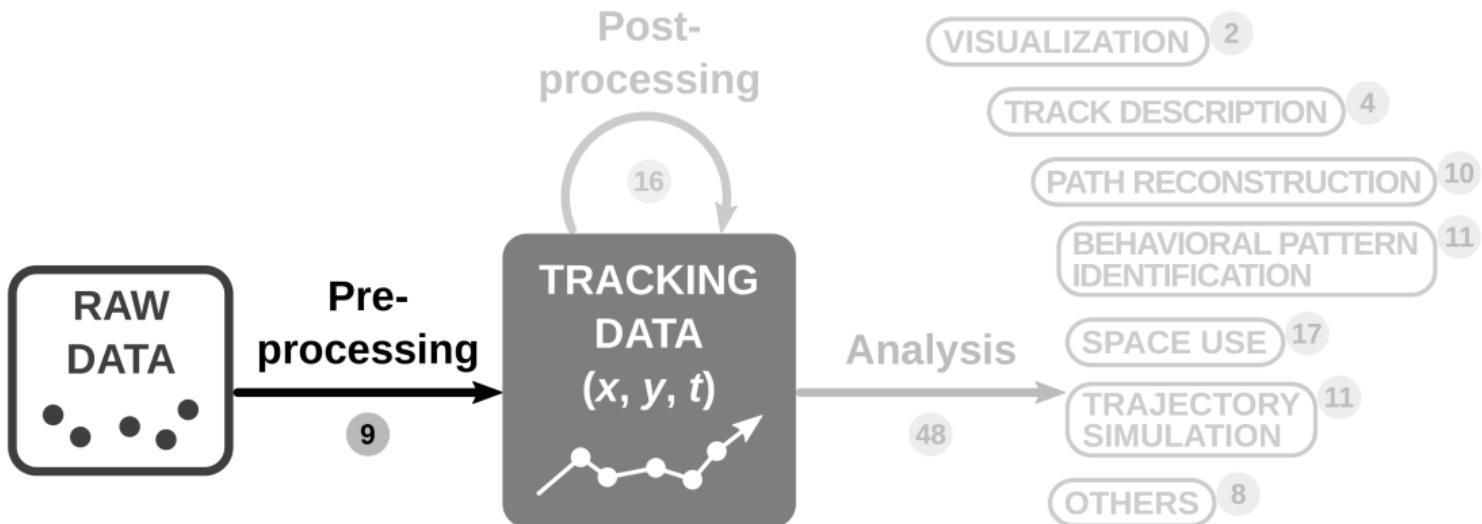
**Tracking packages:** created to process or analyze tracking data



# Tracking workflow

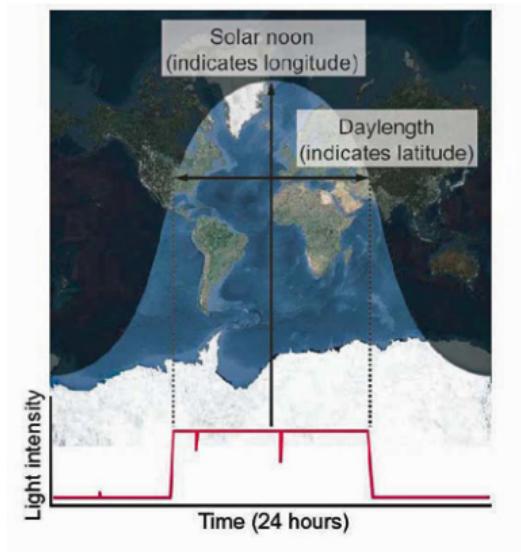


# Pre-processing



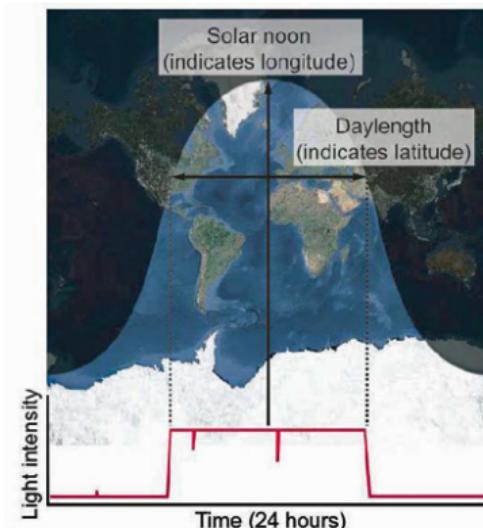
# Pre-processing

E.g. Light level geolocator data



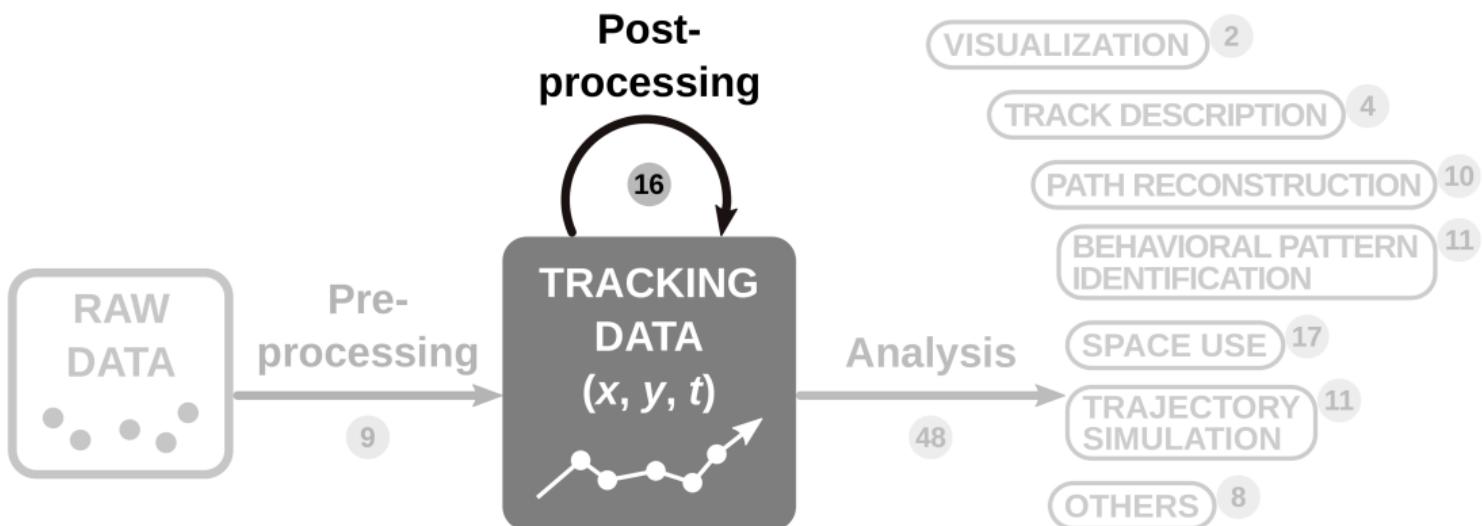
# Pre-processing

E.g. Light level geolocator data



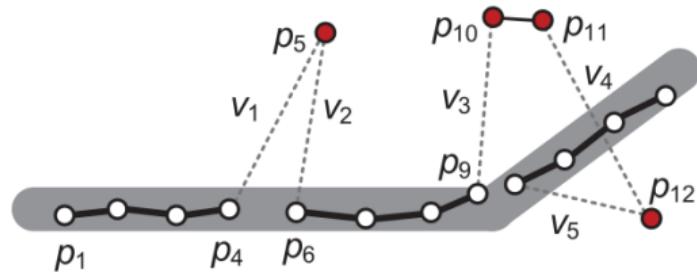
Packages: GeoLight, probGLS, FlightR, trackit, TripEstimation/SGAT, Twilight Free, telemetr, animalTrack, TrackReconstruction

# Post-processing

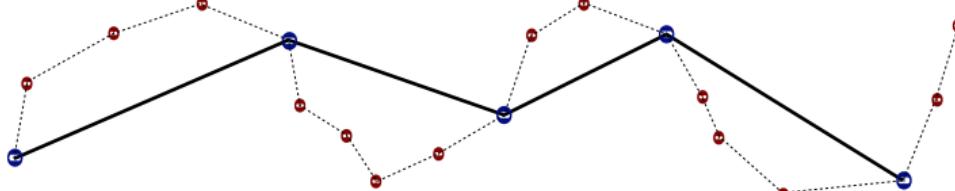


# Post-processing

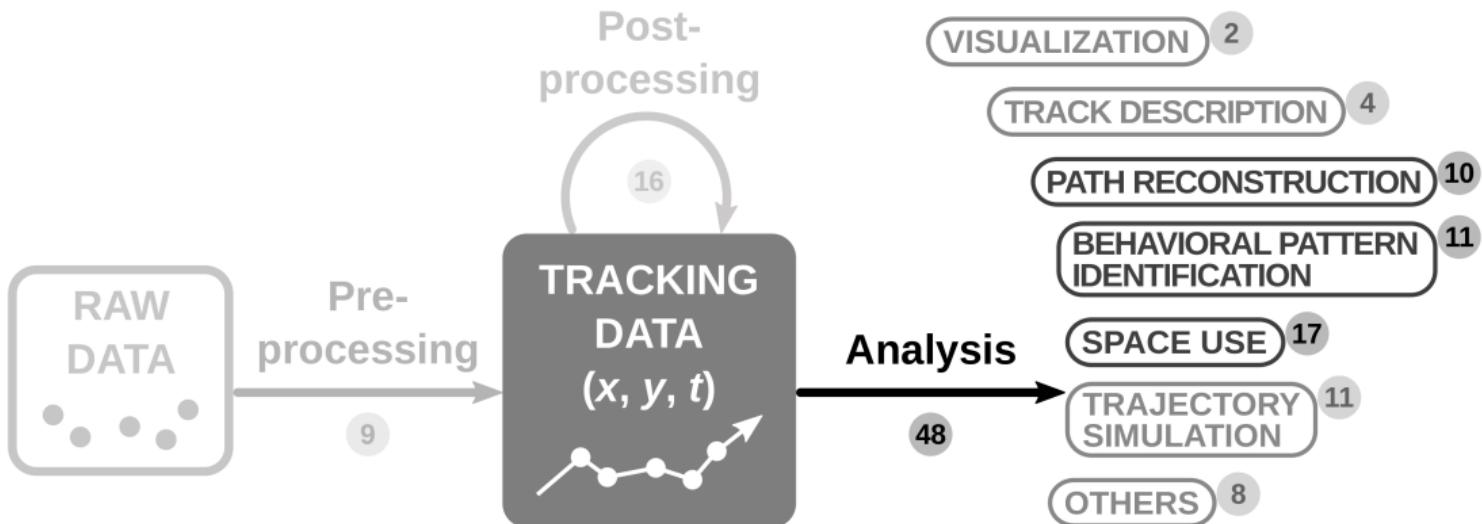
Cleaning (argosfilter, SDLfilter, T-LoCoH, TrajDataMining, trip)



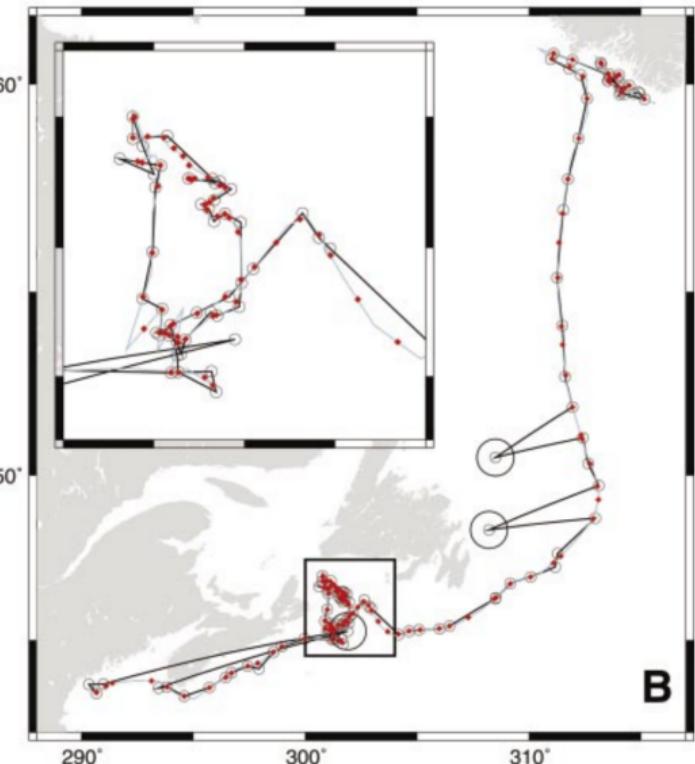
Compression (adehabitatLT, amt, trajectories, trajr, TrajDataMining, rsMove)



# Analysis



# Path reconstruction



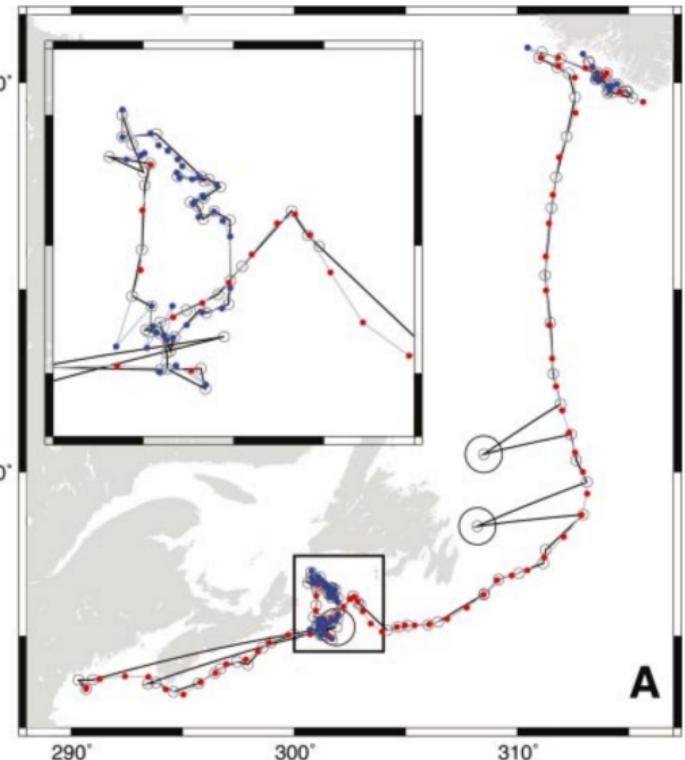
Purposes:

- Correct errors
- Finer data resolution
- Regular time steps

Remember: model means assumptions!

Packages: HMMoce, kftrack, ukfsst/kfsst, argosTrack, bsam, crawl, ctmcmove, ctmm, BayesianAnimalTracker, TrackReconstruction

# Behavioral pattern identification



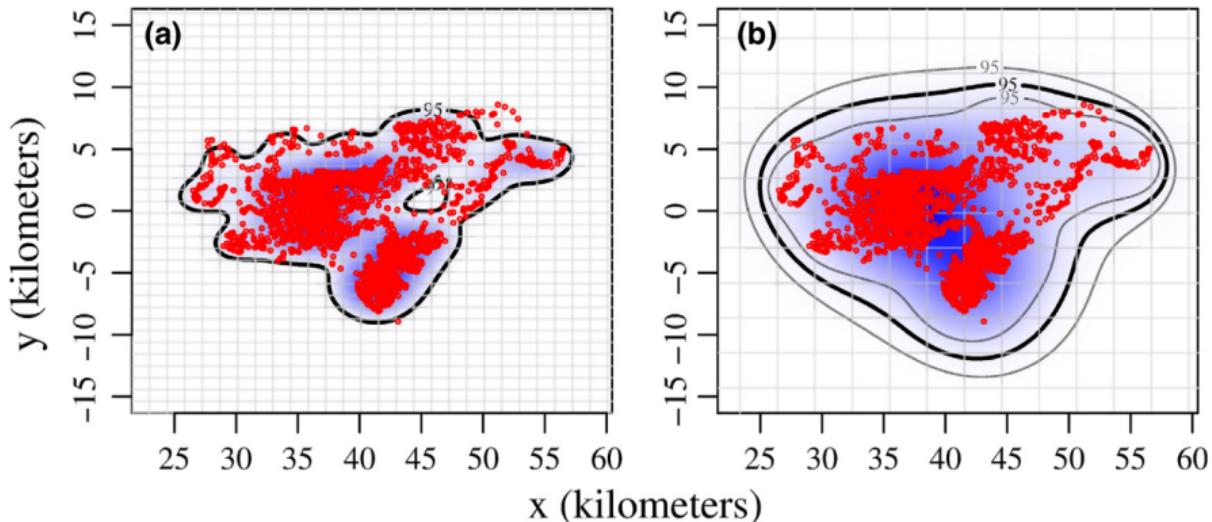
Purpose:

- Proxy of behaviors through the observed movement patterns

Remember: model means assumptions!

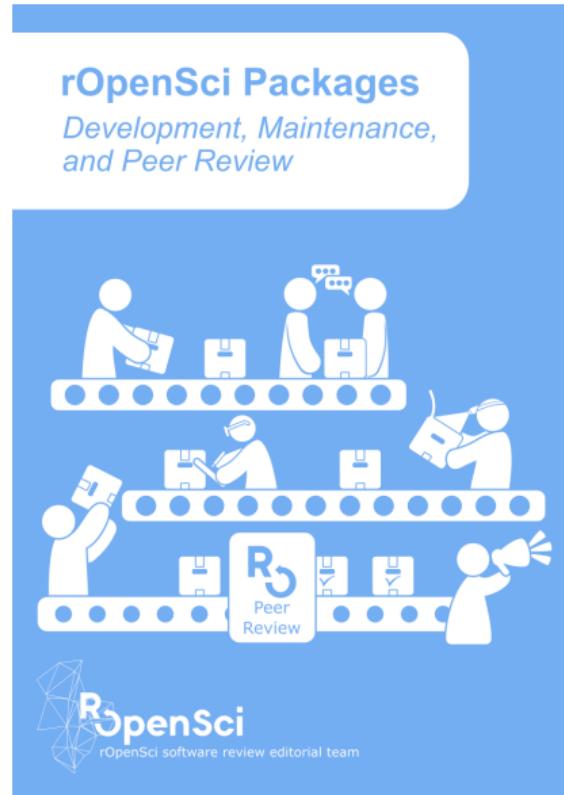
Packages: EMbC, m2b, adehabitatLT, segclust2d, bcpa, marcher, migrateR, bsam, lsmsd, momentuHMM, moveHMM

# Space use



Packages: adehabitatHR, adehabitatHS, amt, move, rhr, BBMM, ctmm, mkde, move, movementAnalysis, T-LoCoH, hab, ctmcmcmove, feedr, VTrack, moveNT, recurse, rsMove

# Quality of a package



- Usability
- Quality
- Style
- **Documentation**
  - how and why of each function
  - ‘statement of need’: gap/improvement

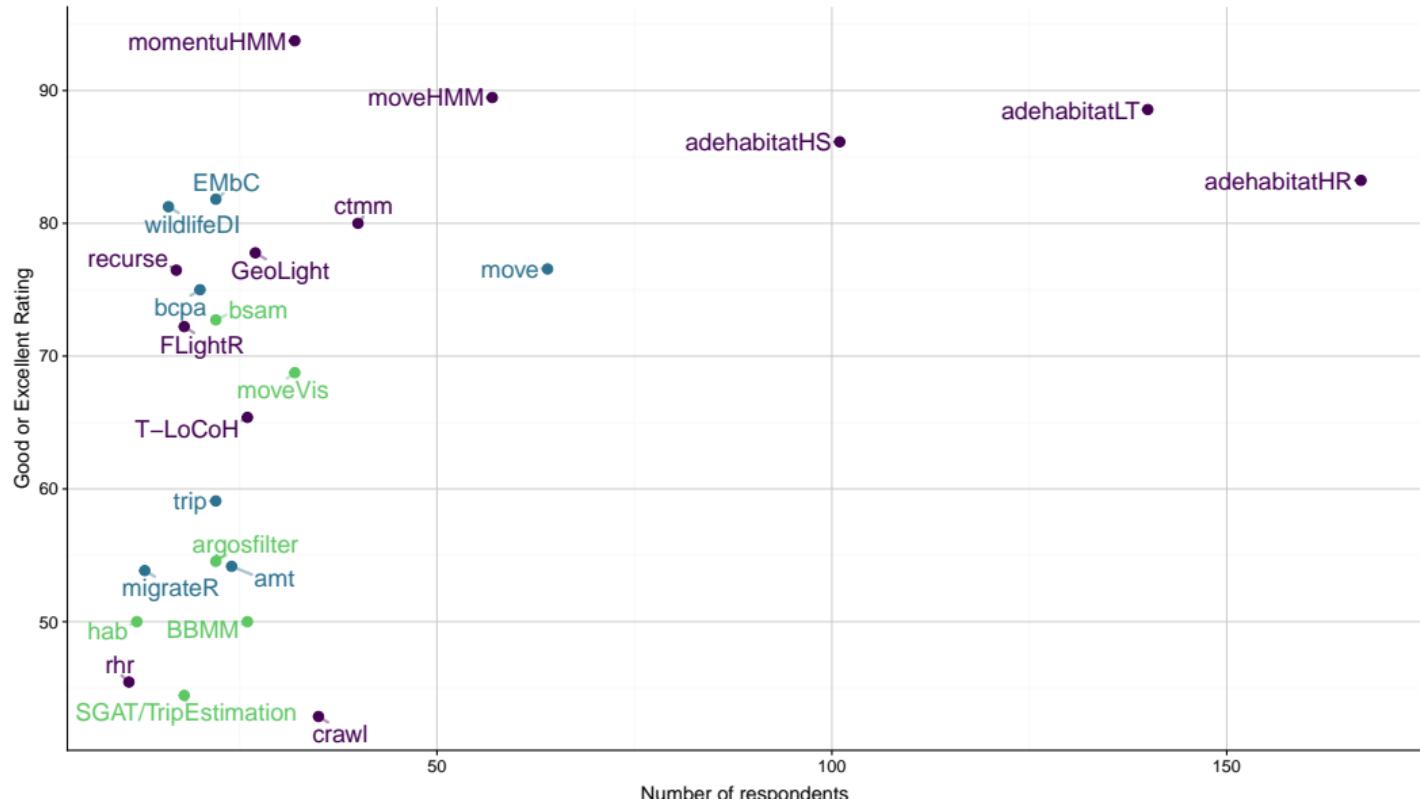
# Documentation

Survey: 225 users

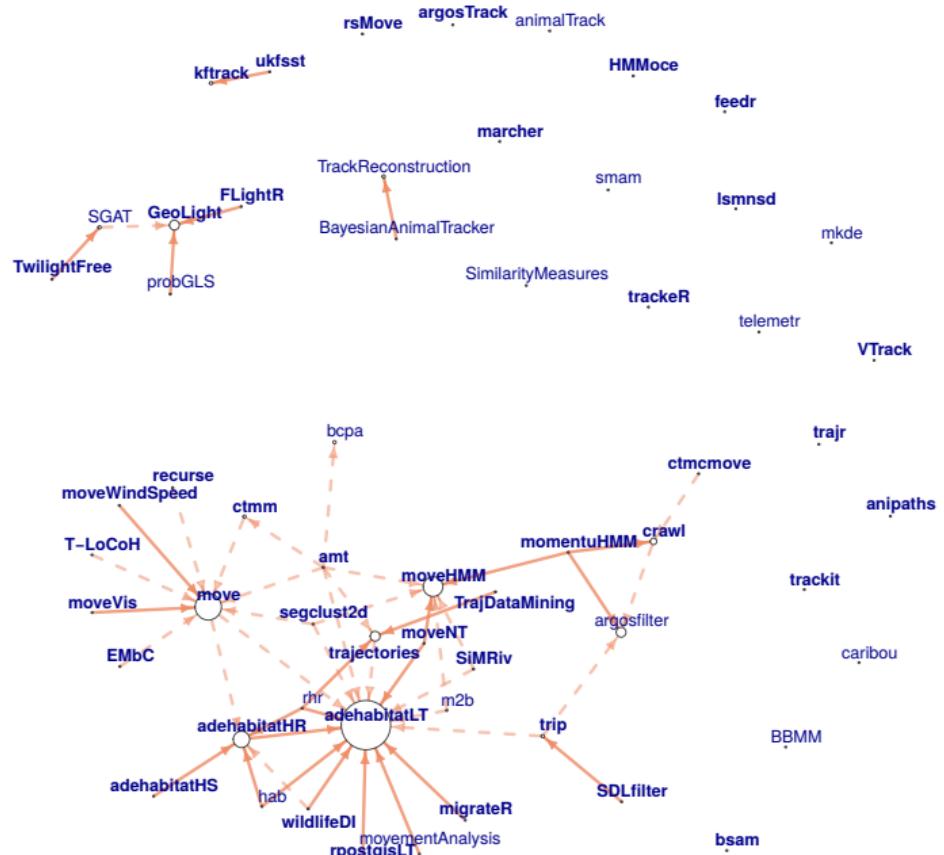
# Documentation

Survey: 225 users

11 pkgs over 75% good/excellent documentation



# Network



Thanks for your attention



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