

Navigating through the R packages for movement

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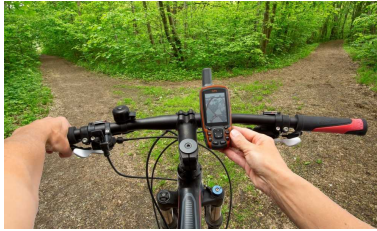
useR! - July 2019



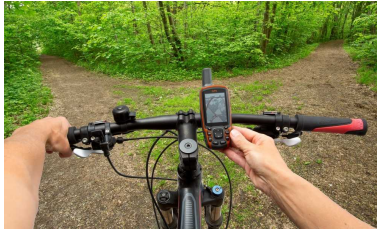
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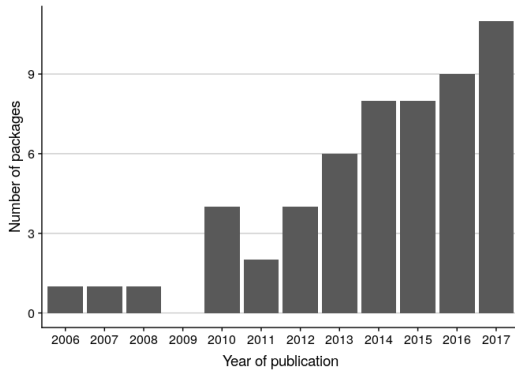
Movement



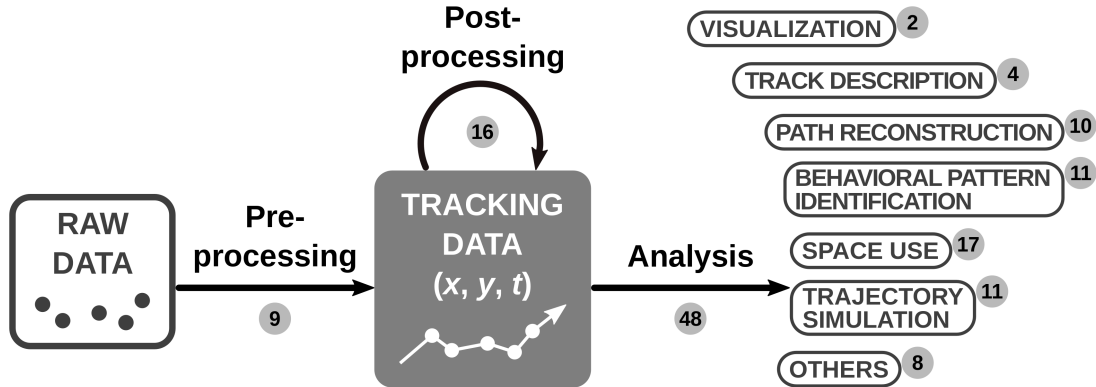
Movement

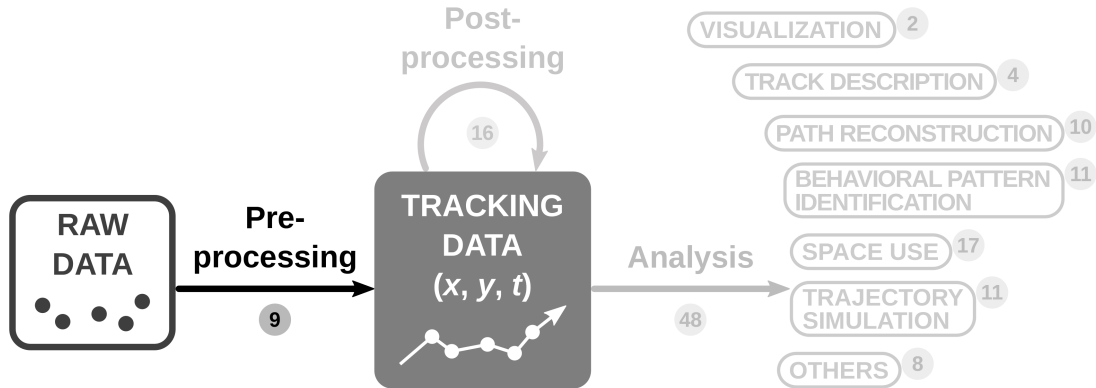


Tracking packages: created to process or analyze tracking data



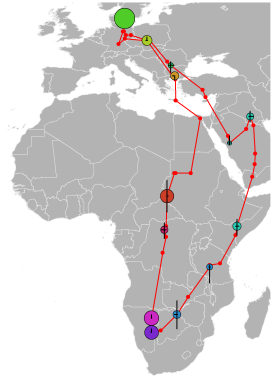
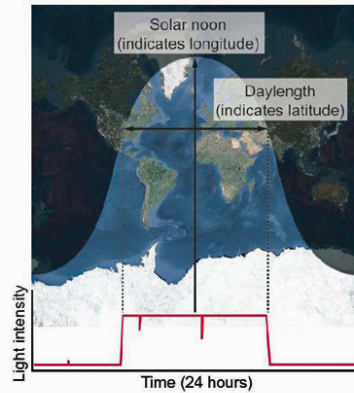
Tracking workflow





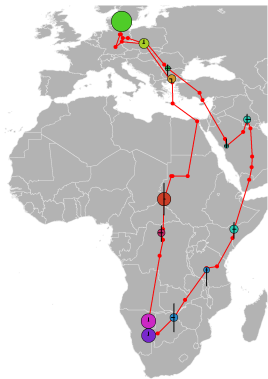
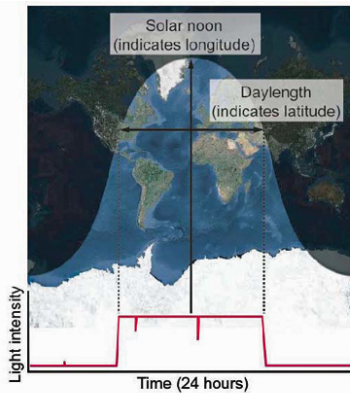
Pre-processing

E.g. Light level geolocator data

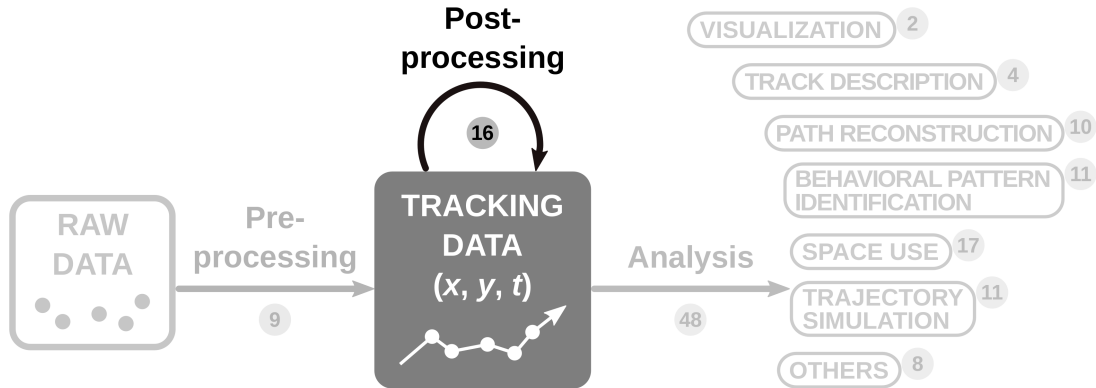


Pre-processing

E.g. Light level geolocator data

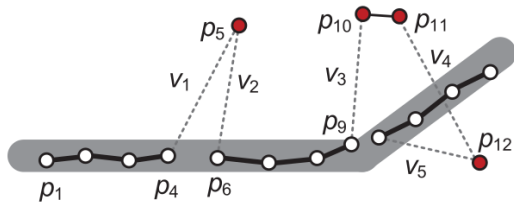


Packages: GeoLight, probGLS, FlightR, trackit, TripEstimation/SGAT, Twilight Free, telemetr, animalTrack, TrackReconstruction

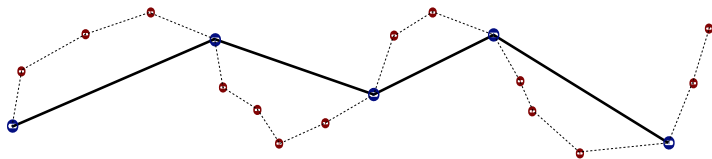


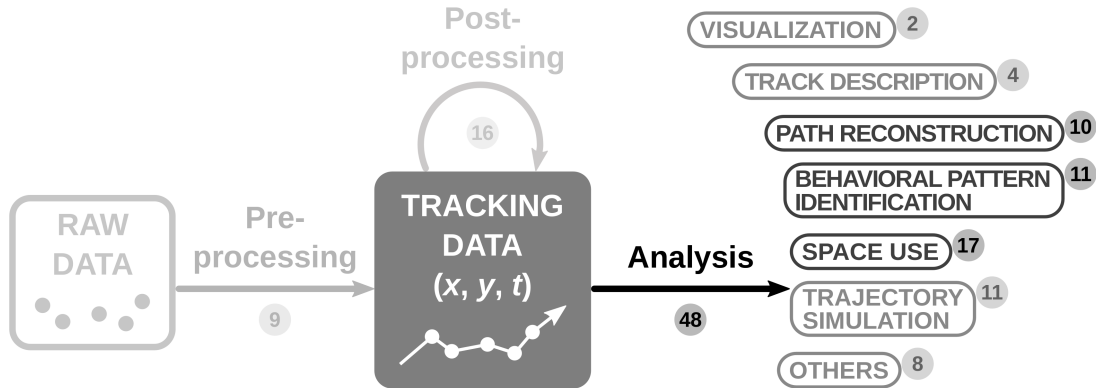
Post-processing

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

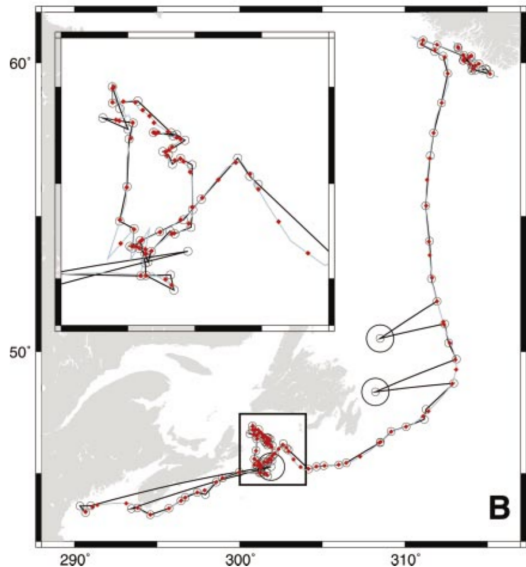


Compression (adehabitatLT, amt, trajectories, trajr, TrajDataMining, rsMove)





Path reconstruction



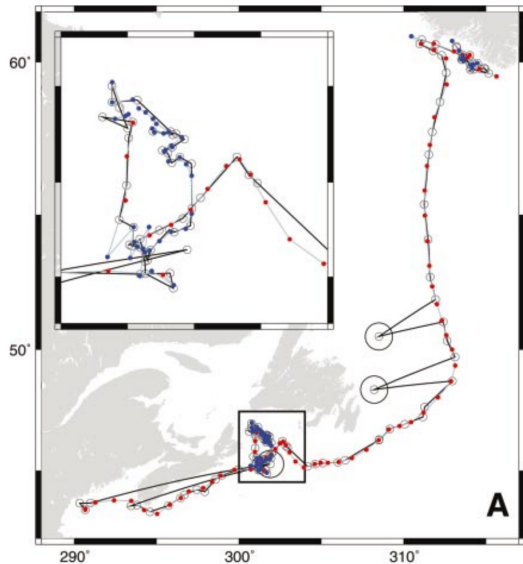
Purposes:

- Correct errors
- Finer data resolution
- Regular time steps

Remember: model means assumptions!

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

Behavioral pattern identification

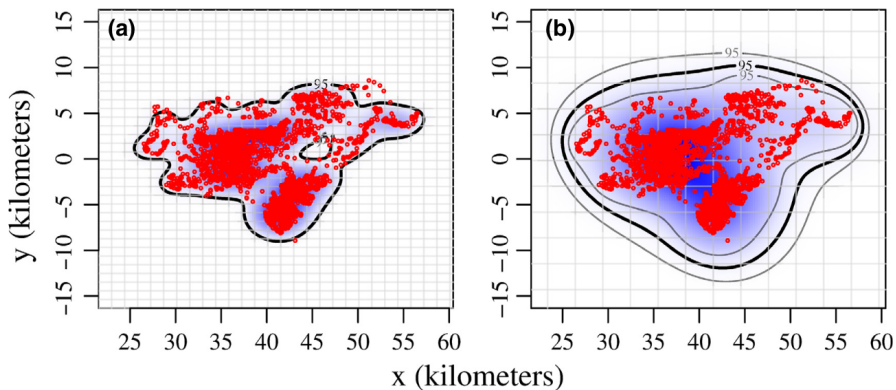


Purpose:

- Proxy of behaviors through the observed movement patterns

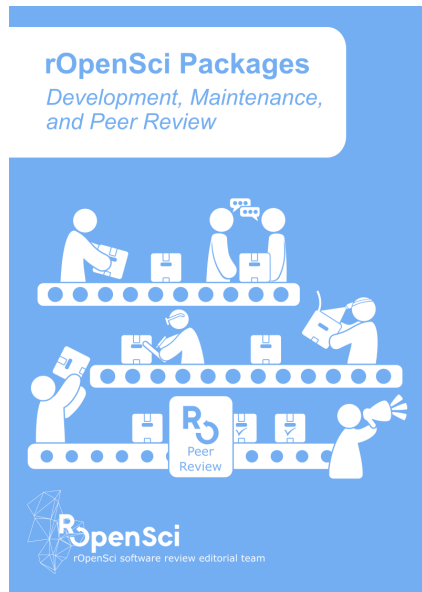
Remember: model means assumptions!

Packages: EMbC, m2b, adehabitatLT, seg-clust2d, bcpa, marcher, migrateR, bsam, ls-mnsd, momentuHMM, moveHMM



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

Quality of a package



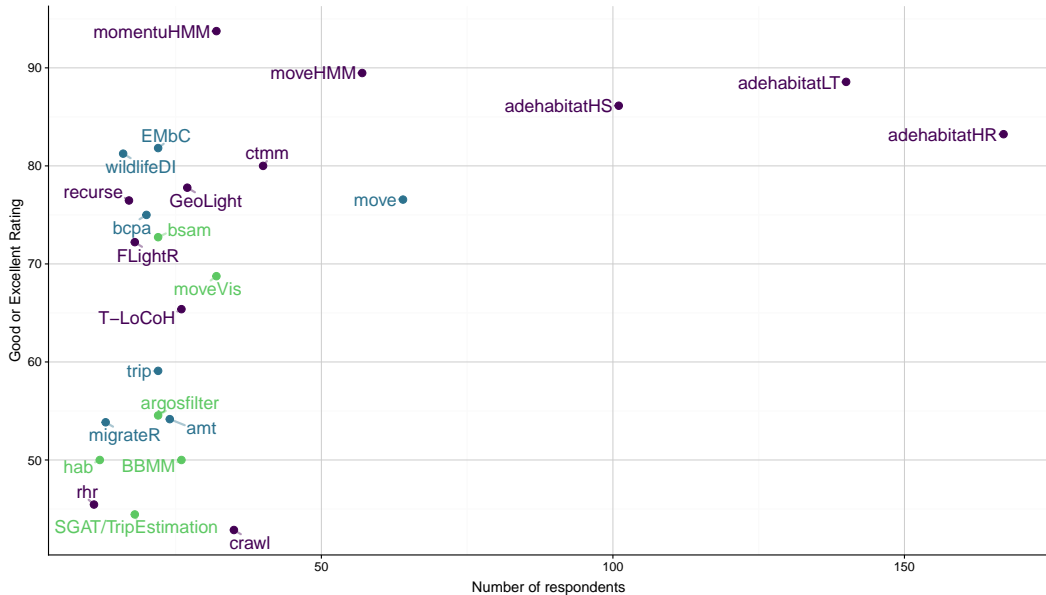
- Usability
- Quality
- Style
- **Documentation**
 - how and why of each function
 - ‘statement of need’: gap/improvement

Survey: 225 users

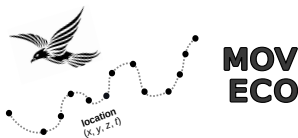
Documentation

Survey: 225 users

11 pkgs over 75% good/excellent documentation



Thanks for your attention



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