



MoveR:

an R package for easy analysis of animal video-tracking data

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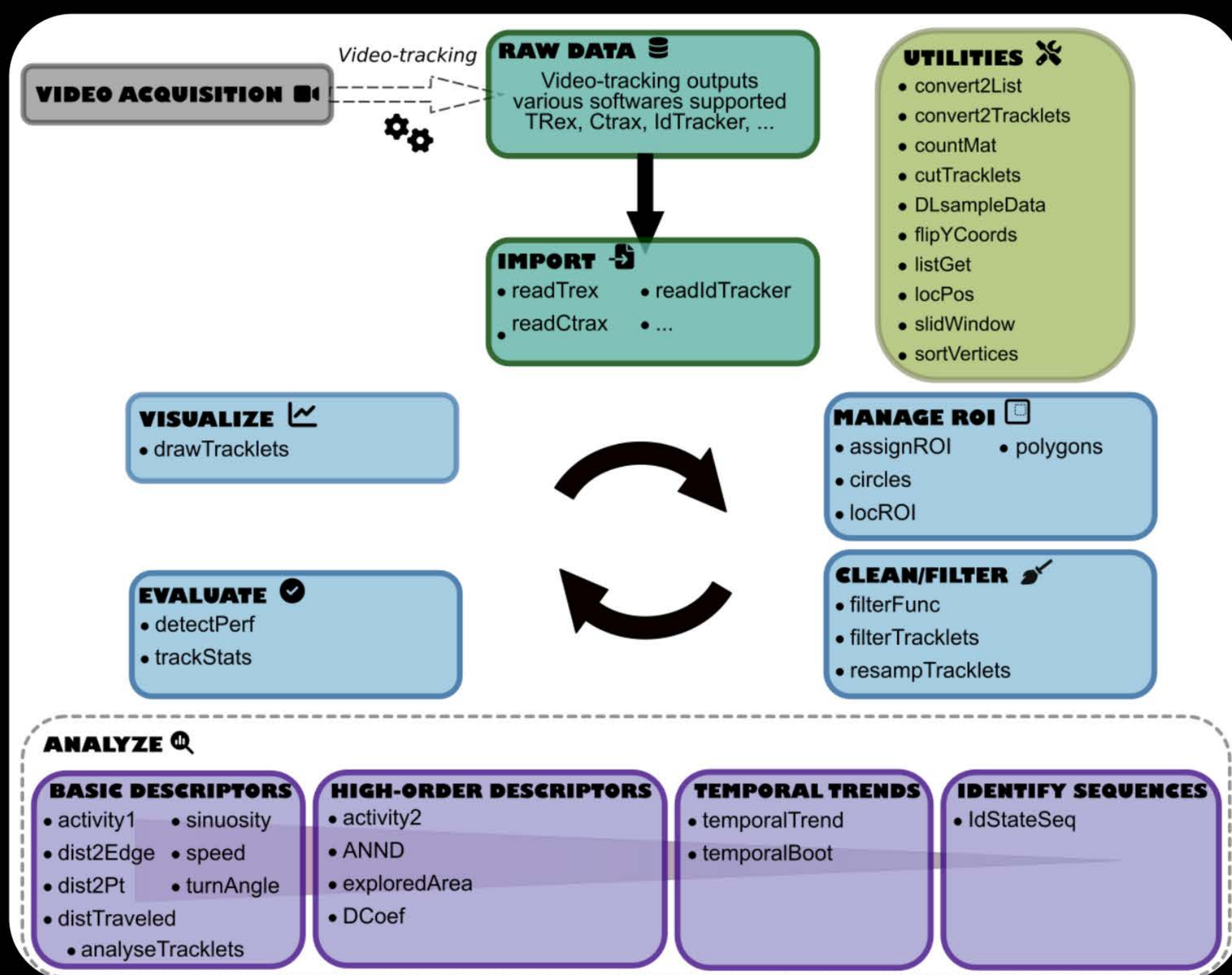
MOTIVATION & SIGNIFICANCE

Animal movement & behavior are critical to understanding ecological & evolutionary processes. Methodological & technological innovations of video-tracking solution enable collection of high-resolution data. Yet, analyzes & interpretations are challenging tasks due to data complexity, heterogeneity and noisiness.

To overcome this challenge, we have developed MoveR, an R package including a suite of flexible tools for:

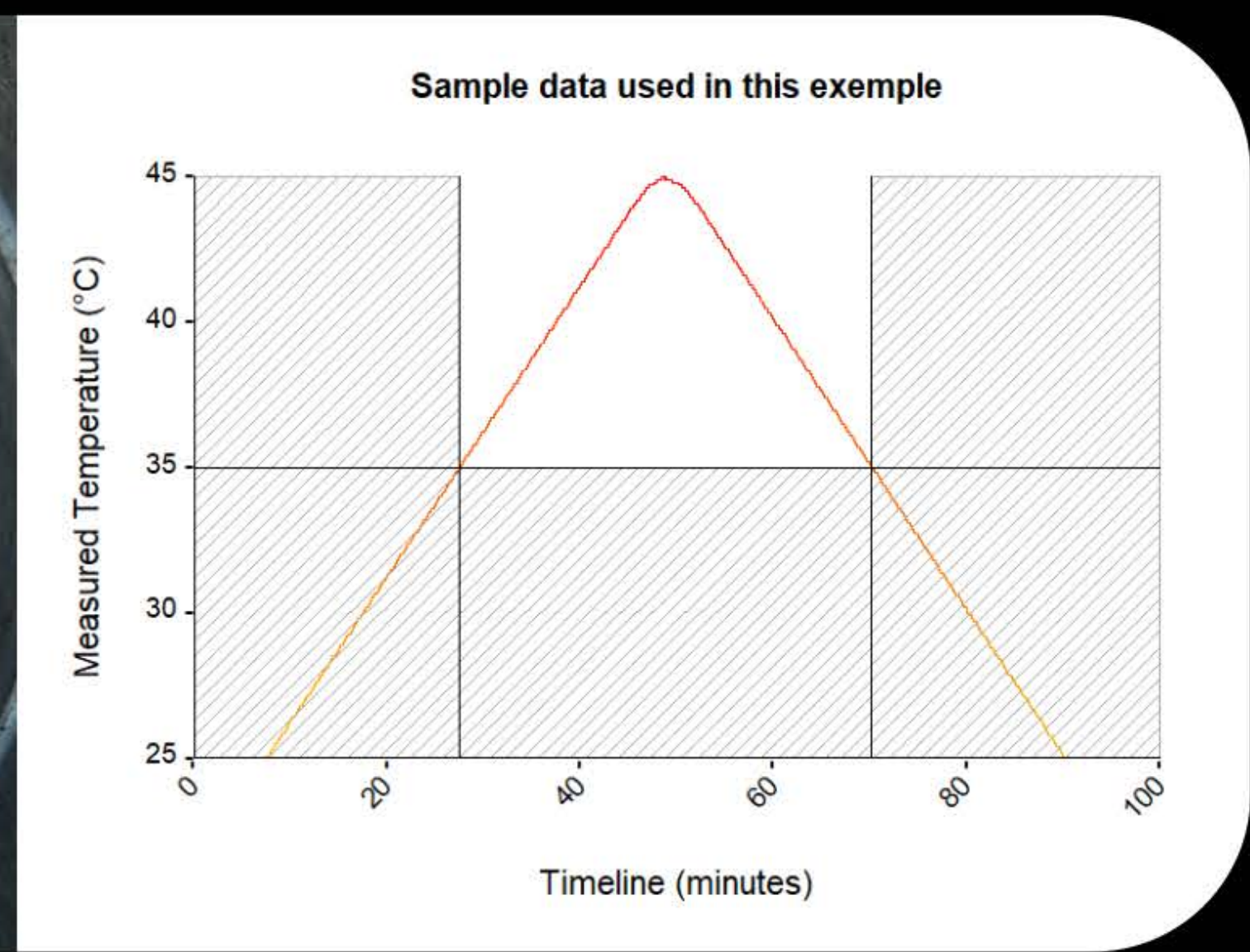
- 🕒 polishing data
- 🕒 removing tracking artifacts
- 🕒 subsetting and plotting individual paths
- 🕒 computing different movement and behavior metrics

WORKFLOW

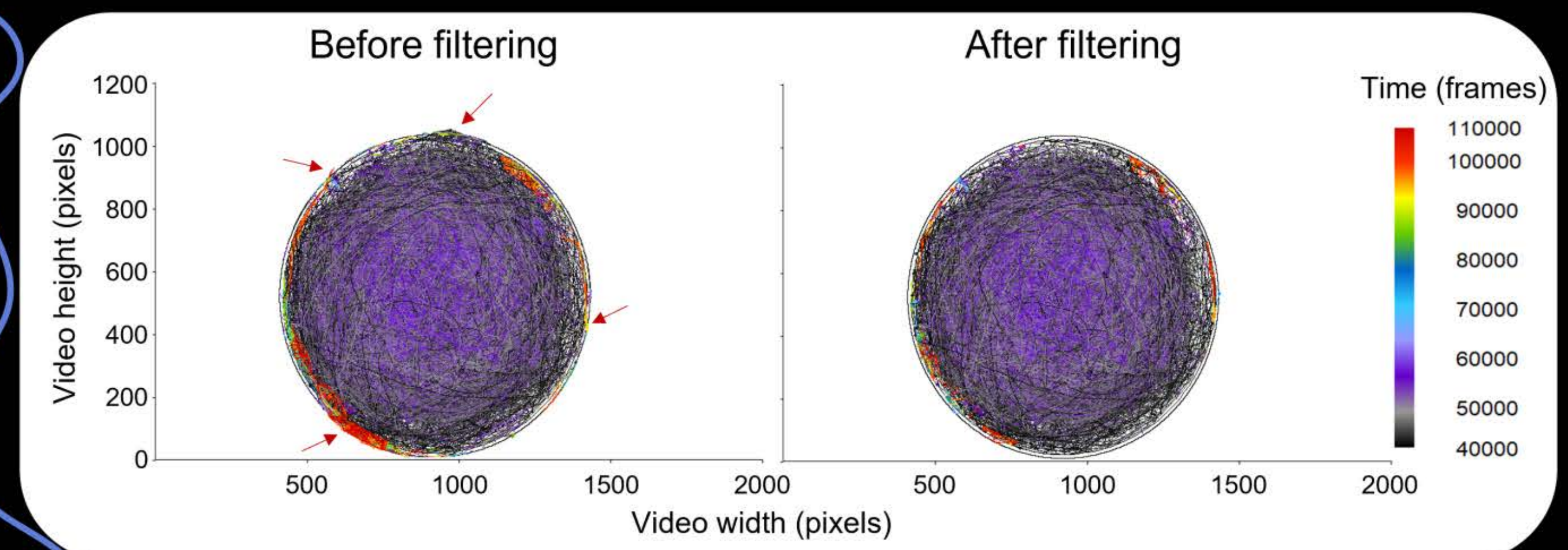


ILLUSTRATIVE EXAMPLE

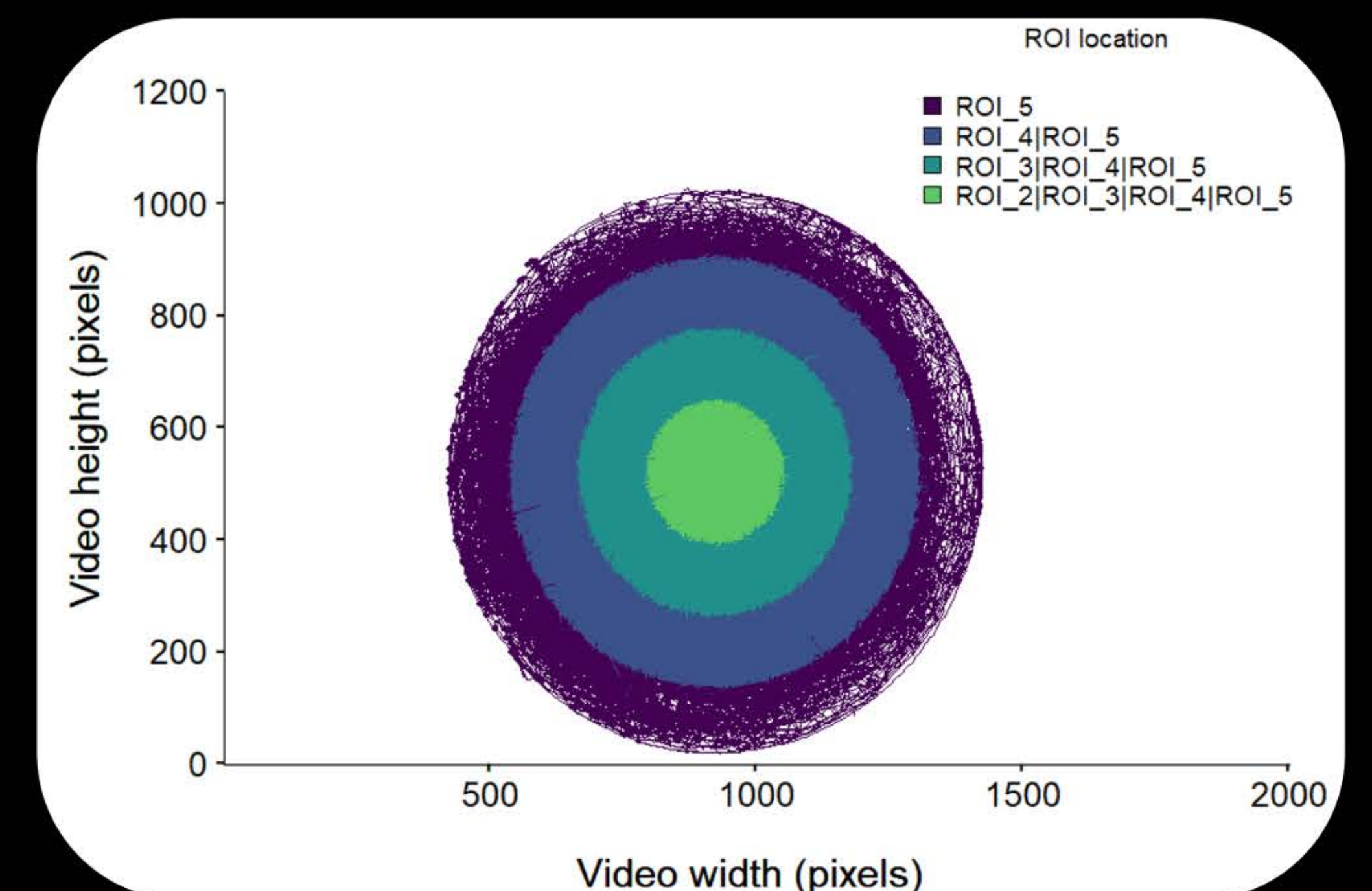
1. Video-tracking of 24 parasitoid micro-wasps (*Trichogramma* sp.) over increasing & then decreasing temperature ramps (from 18°C to 45°C and back to 18°C)



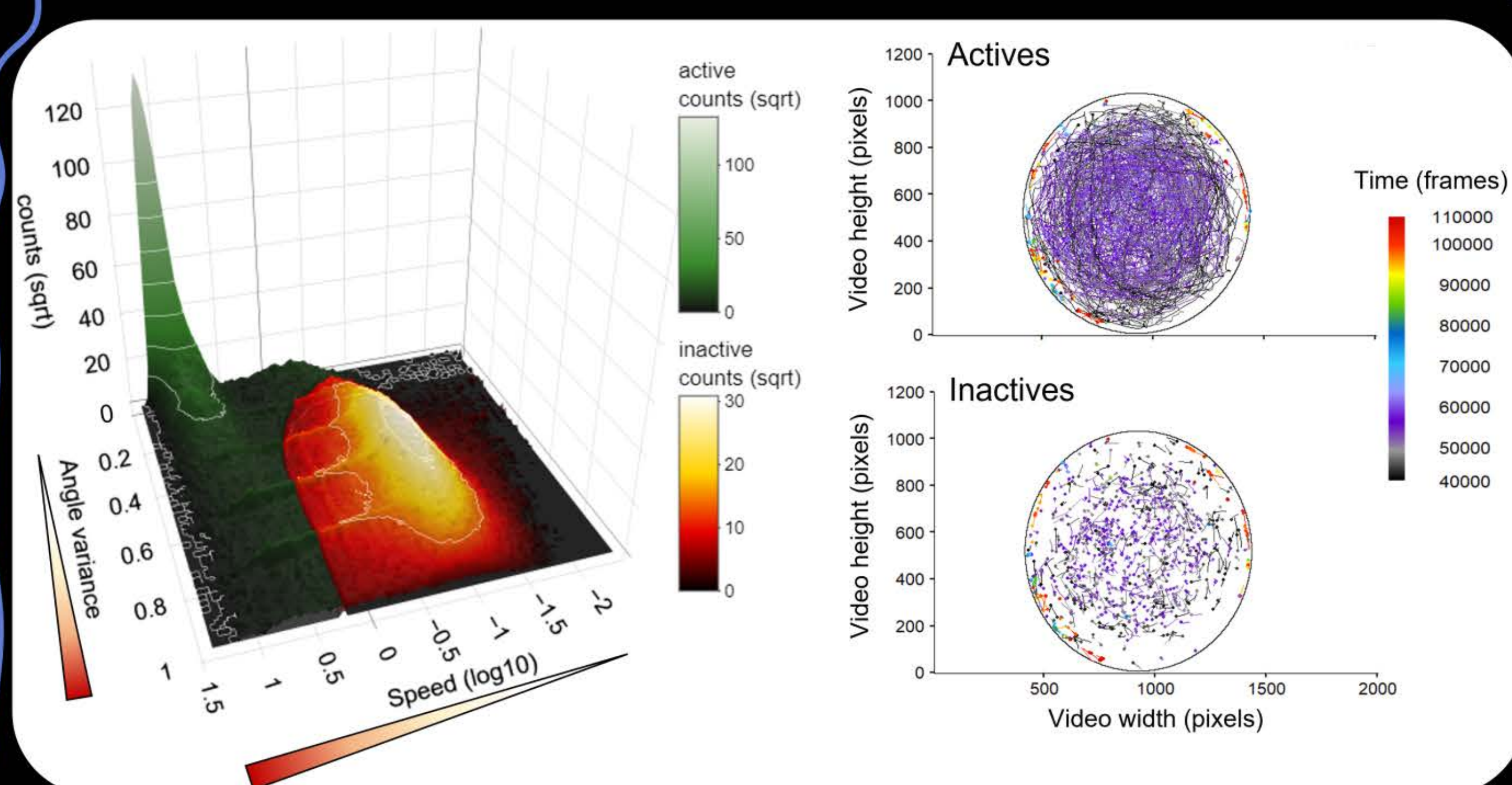
2. Remove wrong identification & noise outside the arena by importing or generating arena edges coordinates



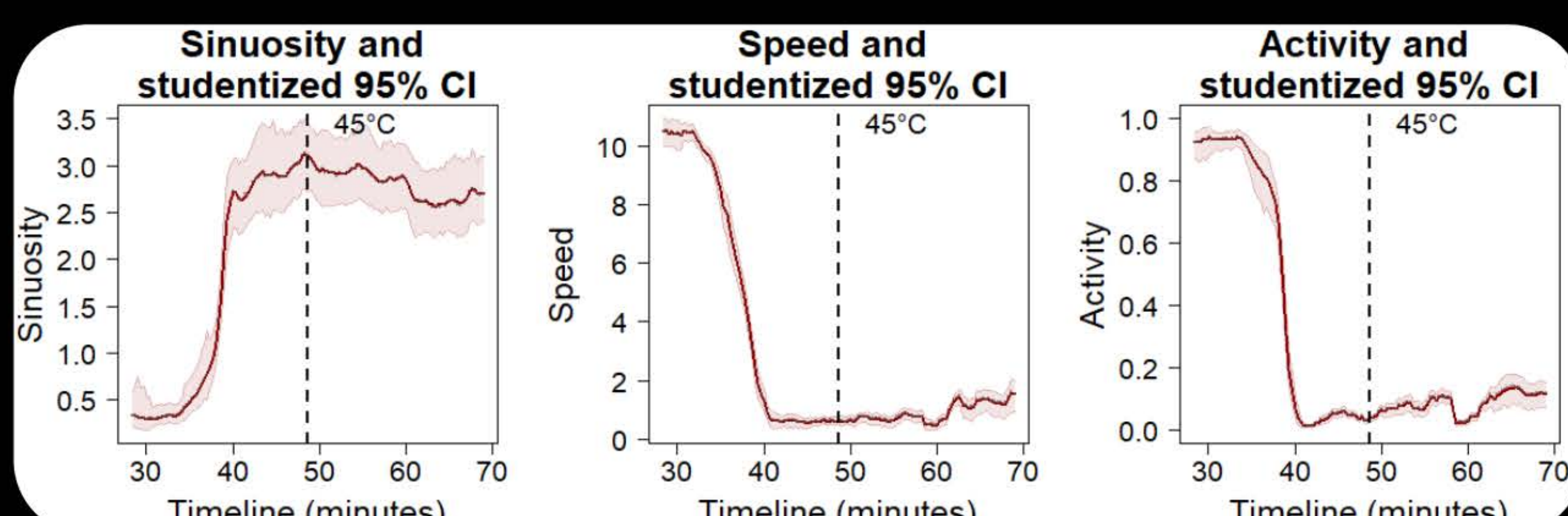
3. Identify trajectories detected inside specific regions of interest (ROI, with increasing distance to the center of the arena)



4. Use unsupervised learning method relying on density based clustering for classifying activity states (active vs inactive) in two dimensions (here speed & turn. angle variance)



5. Compute & display temporal trends & studentized 95% confidence interval for several metrics



TAKE HOME MESSAGE

- 🕒 Available in R environment (open source code)
- 🕒 Flexible toolbox for beginner and advanced users
- 🕒 Easy automation and parallel processing
- 🕒 A full workflow improving analyses reproducibility

