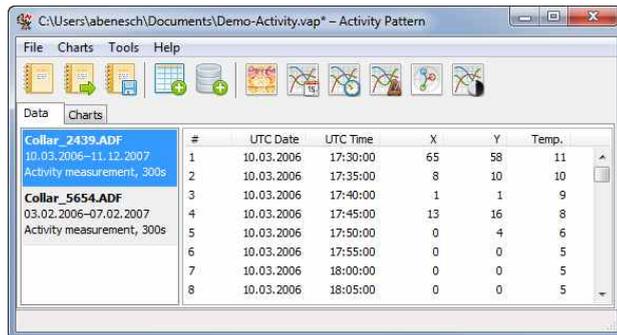
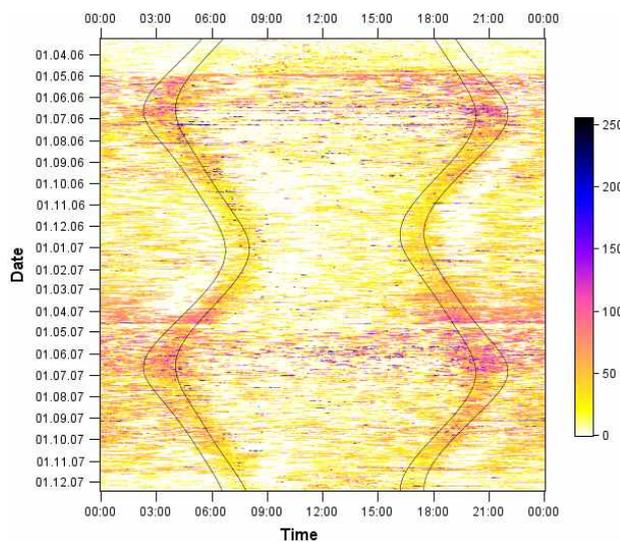


VECTRONIC AEROSPACE PRESENTS

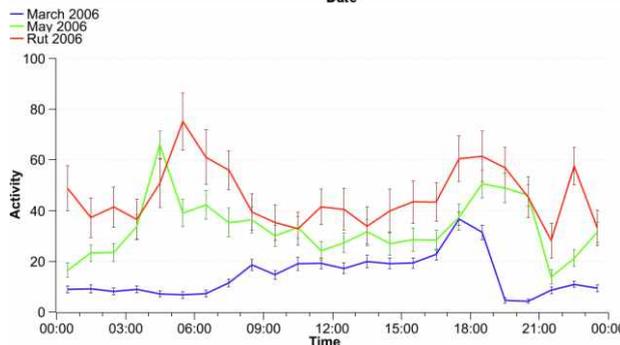
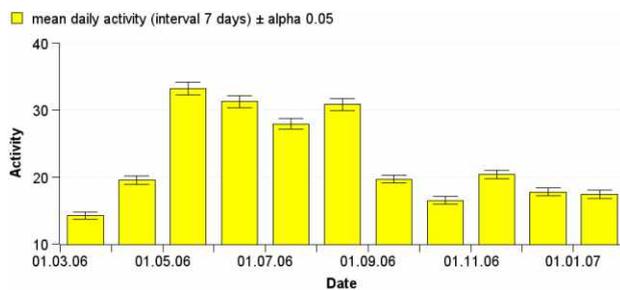
Activity Pattern - Software



Activity Pattern startup screen



Actogram with overlays for sunrise, sunset and nautical twilight



Statistical charts by date and time with standard deviation

Activity Pattern

Making activity visible!

Activity Pattern provides fast access to activity data measured with GPS Plus collars and the ability to quickly visualise data using methods currently in use in the field of telemetry aided behavioural biology. All results can be exported as graph suitable for publication and as text for further analysis.

Activity Plot / Actogram

See what's behind the numbers!

- plot every single interval of activity colour-coded and organised by date and time
- get an idea about the daily and seasonal patterns in one glance
- check for days differing from the normal activity pattern

Statistical Charts

Get an overview on activity patterns!

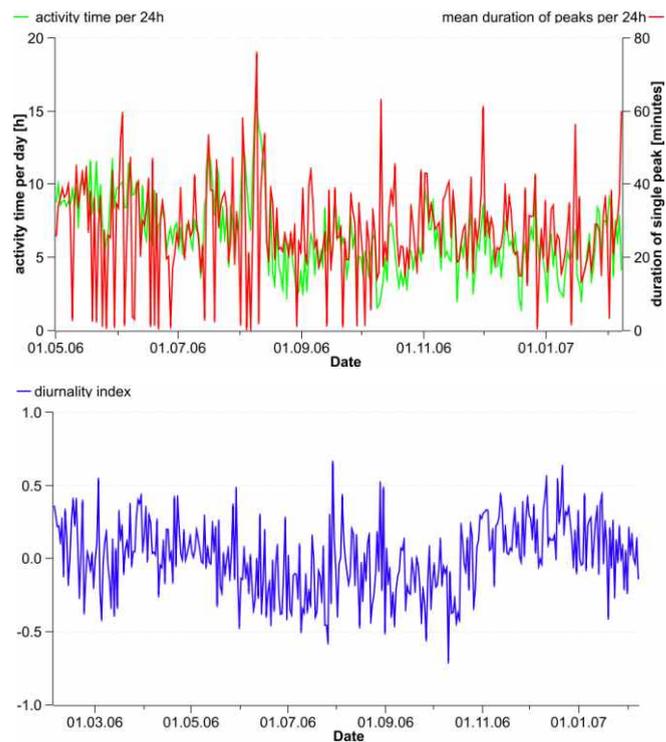
- calculate the mean or median of activity for every day, week, or month and find out how activity changes with seasons and age
- calculate mean or median activity during the day and look out for daily activity maxima or resting times
- add error bars with standard deviation, standard error and confidence interval



Time budget

Zoom into the pattern !

- define a threshold between resting and activity and calculate number and duration of activity peaks
- calculate total activity time per day based on the activity peaks
- calculate the day-night relation of activity (diurnality index) in a range from +1 (exclusively diurnal) to -1 (exclusively nocturnal) with regard to the seasonal variations in daylength

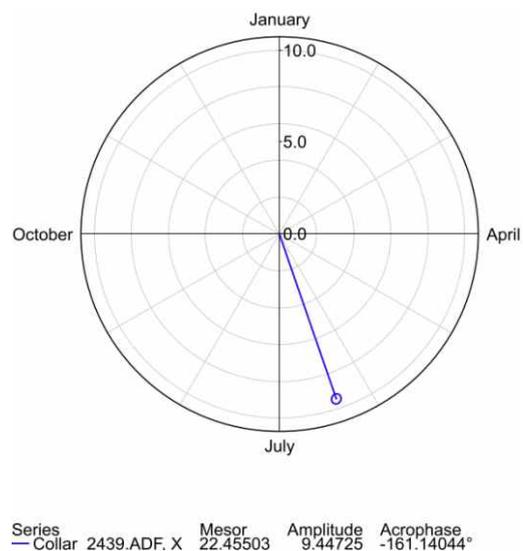


Daily activity time and diurnality index

Cosinor

Have a look at the animal's clock!

- test for significant period lengths (e.g. 24 hours or one year) in activity by performing a regression with a sine function, also known as the cosinor method
- calculate mesor (rhythm adjusted mean), amplitude and acrophase (position of the sine maximum) for any given period length
- display the results in polar coordinates in the form of a circular chart, the common representation of the cosinor

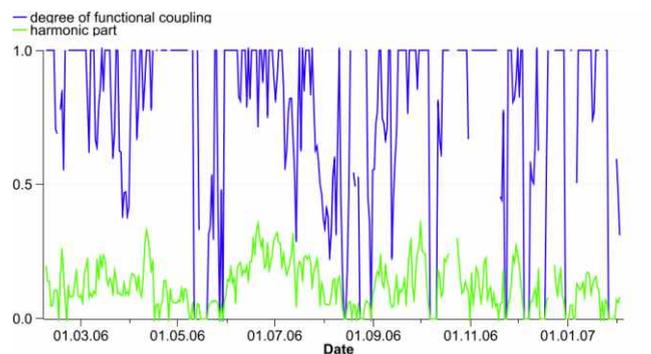


Cosinor clock

Rhythm analysis

Find the rhythm of your animal!

- perform Fourier transform on your data to reveal rhythmic components
- calculate the percentage of periods harmonic to 24 hours as harmonic part and degree of functional coupling as measure of how well an animal is synchronised with the 24 hour periodicity of the solar cycle



Degree of Functional Coupling and Harmonic Part