TRANSLATIONAL SENSORY & CIRCADIAN NEUROSCIENCE *UNIT*

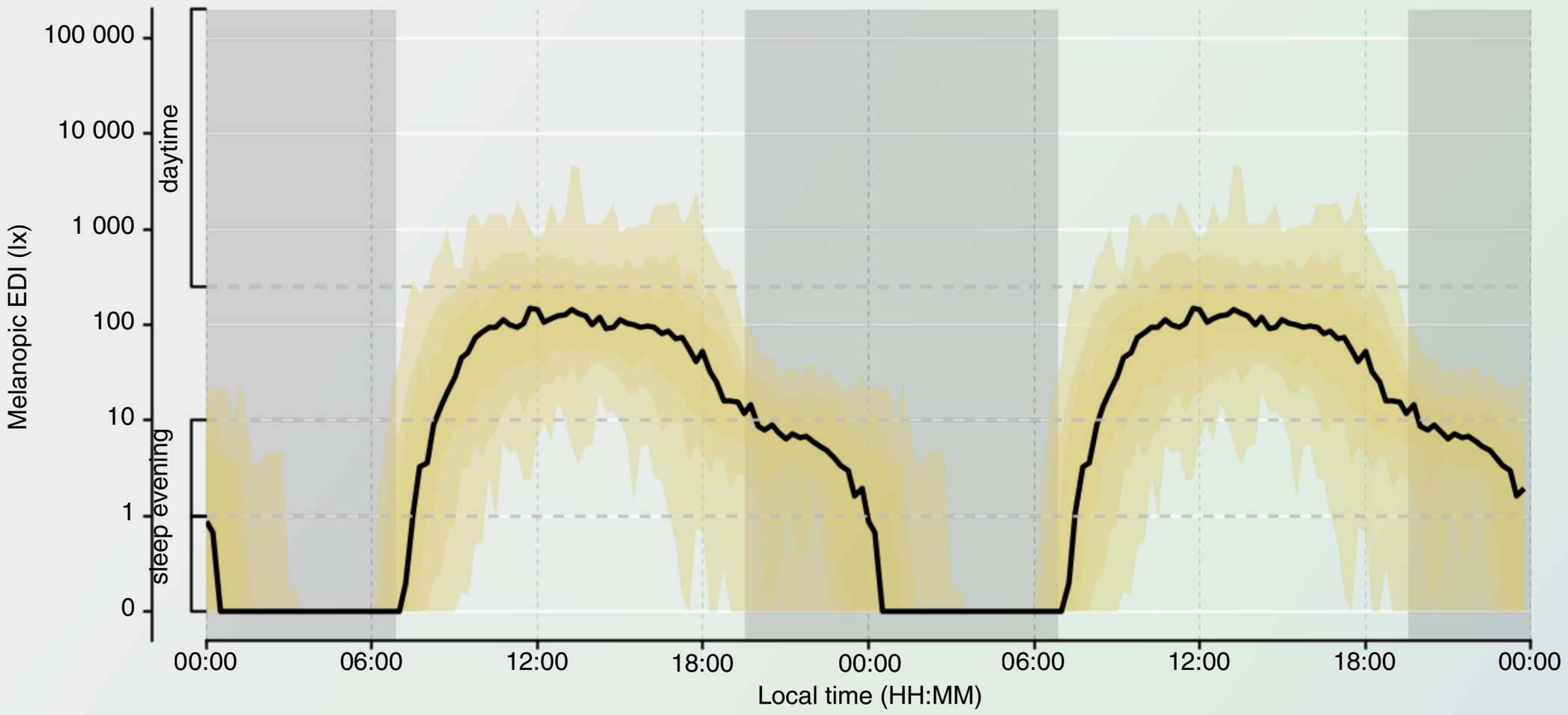
TUMCREATE

Open and reproducible analysis of light exposure and visual experience data

Online course

We're excited to announce a new online course on analysing wearable light exposure and visual experience time-series data in R.

Who it's for: Post-docs, PhD students, data scientists, and research-active academics working with wearable time-series data of light in R for light data (and distance, spectrum etc).
Format: Two tracks (Beginner & Advanced). Each track is repeated once, with two live webinars per day (morning & evening, CET) to suit global time zones.
Session length: 90 minutes each (theory + live coding + Q&A).
Certificate: Issued on completion.



What to expect

- Live walkthroughs of LightLogR's workflow from import → (pre-)processing → metrics → visualisation.
- Practical, reproducible examples with tidy data principles for both the circadian and visual experience community (including vision science, myopia research, ...).
- Ready-to-reuse code snippets and example datasets.
- Dedicated Q&A with the developer.
- A certificate upon completion.

Prerequisites

- **Beginner:** Basic familiarity with R. No prior LightLogR experience required.
- **Advanced:** Comfortable with tidy workflows + completion of the beginner track (or equivalent LightLogR experience).

Register now

Beginner Course

Programme at a glance

- Orientation to LightLogR.
- Scope & philosophy, tidy workflow design, package tour.
- Data in, sense-check out.
- Import from multiple devices; quick overview plots & summaries.
- Core processing & metrics.
- Dealing with gaps; basic processing; light-exposure metrics.
- Photoperiod & zero inflation.
- Adding photoperiod to data and plots; handling zero-inflated exposure on log scales.

Intended learning outcomes

On completion, participants will be able to…

Knowledge & understanding

- **Describe** the scope, high-level workflow, and tidy-data principles that structure LightLogR.
- **Identify** common properties of wearable light time-series and recognise typical data issues (e.g., gaps, zero inflation).

Intellectual skills

- **Employ** basic preprocessing options and justify choices for gap handling and log-scale treatment of zero-inflated data.
- **Use** available light-exposure metrics and recognise metrics appropriate to a stated research question.

Subject-specific / practical skills

- **Set up** LightLogR and **import** example datasets from supported devices/formats.
- **Generate** quick overview plots and summarise data for quality checks.
- **Apply** core processing steps to handle missingness and irregular sampling.
- **Compute** standard light-exposure metrics using LightLogR functions.
- **Annotate** datasets and plots with photoperiod information.
- **Implement** a simple strategy to address zero inflation when working on logarithmic scales.

Transferable skills

- **Organise** analyses using tidy, reproducible workflows suitable for collaboration.
- **Present** results using clear plots and concise summaries for meetings and manuscripts.

Notes on scope: Outcomes emphasise demonstrable skills achievable via short, focused exemplars and templated code within 90-minute sessions per webinar. Longer projects (e.g., large-scale benchmarking or bespoke modelling) are intentionally out of scope.

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Advanced course

Programme at a glance

- Merging streams.
- Join light with sleep (and other) data; compute advanced metrics.
- Patterns in practice & visual finesse.
- Detecting clusters of conditions/behaviours; building advanced visualisations.
- Time zones.
- Analysing multi-time-zone datasets; workflow tips for larger studies.
- Beyond intensity.
- Working with spectral measurements and distance.

Intended learning outcomes

On completion, participants will be able to…

Knowledge & understanding

- **Explain** key considerations when integrating light with auxiliary streams (e.g., sleep) and when analysingmulti-time-zone cohorts.
- **Summarise** how spectral information and distance measures can inform light-related analyses.

Intellectual skills

- **Design** a small joined-data workflow that derives advanced metrics from merged light–sleep streams.
- **Employ** basic clustering approaches to identify patterns/conditions and interpret their relevance to study aims.

Subject-specific / practical skills

- **Merge** LightLogR outputs with sleep (or other) data using tidy joins.
- **Compute** advanced metrics on the combined dataset.
- **Align** and **visualise** recordings collected across different time zones.
- **Create** more advanced visualisations (e.g., layered/faceted/annotated) for complex study designs.
- **Process** example spectral measurements and calculate simple distance measures relevant to light exposure.

Transferable skills

- **Document** and **package** analysis steps for team reuse, and transparent reporting.

Notes on scope: Outcomes emphasise demonstrable skills achievable via short, focused exemplars and templated code within 90-minute sessions per webinar. Longer projects (e.g., large-scale benchmarking or bespoke modelling) are intentionally out of scope.

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