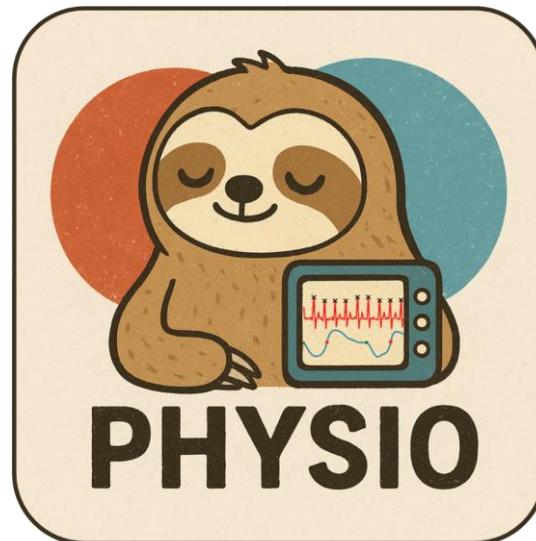


# Using the toolbox physio



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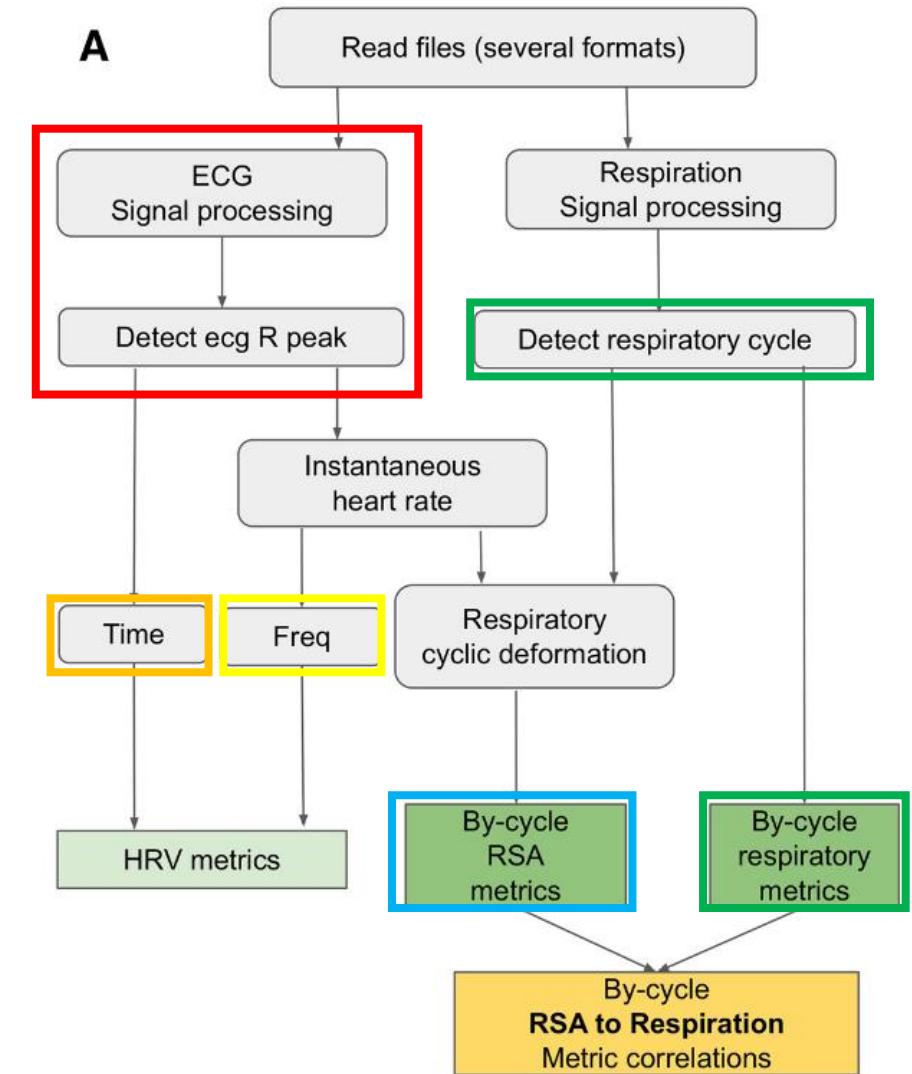


# Ressources

- Github
  - <https://github.com/samuelgarcia/physio>
- Article (to cite)
  - <https://www.eneuro.org/content/10/10/ENEURO.0197-23.2023>
- Doc
  - <https://physio.readthedocs.io/en/latest/>

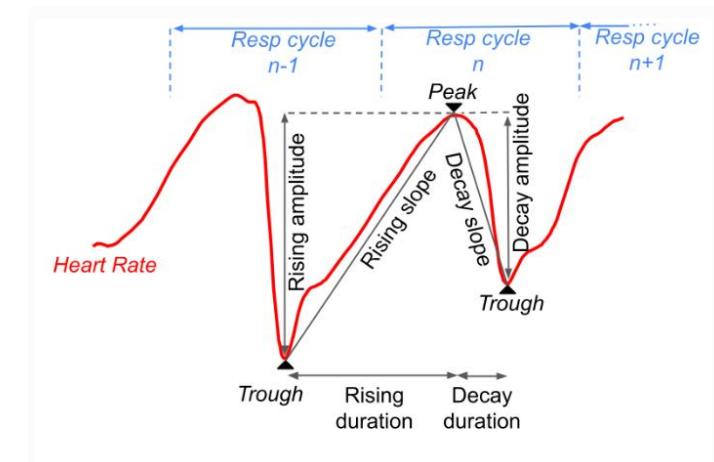
# Main functions

- ECG
  - Detect R peaks = `physio.compute_ecg()`
  - Compute time domain metrics = `physio.compute_ecg_metrics()`
  - Compute freq domain metrics = `physio.compute_hrv_psd()`
- Respi
  - Detect cycles and compute cycle by cycle metrics = `physio.compute_respiration()`
- RespHRV
  - Compute cycle by cycle metrics of RespHRV = `physio.compute_resphrv()`



# Strengths of physio

- Like others toolbox, physio ...
  - Detect R peaks of ECG and compute time and frequency domain metrics of HRV
  - Compute cycle by cycle respiratory detections and features
- Unlike others toolbox, physio ...
  - Can be easily set by a **preset of parameters**
    - Allowing processing different species and sensor types
  - This preset of parameters can be easily **adjusted by the user**
    - Breaking with a « utopia » way of developing tools
  - Compute **cycle by cycle RespHRV**
  - Has a nice documentation dealing with both theoretical and practical aspects





## Let's practice

- Go there :  
[https://github.com/ValentinGhibaudo/Formation\\_2025\\_physio\\_cardio\\_respi](https://github.com/ValentinGhibaudo/Formation_2025_physio_cardio_respi)
- And follow instructions ...