

# Emotional pattern recognition from electrocardiogram signals



*An exploration by  
Jack Chou*

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## GOALS

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- Play with the NeuLog ECG
- Explore ECG correlates with:
  - Ephemeral emotional states
  - Sustained emotional states



## **NeuLog ECG**





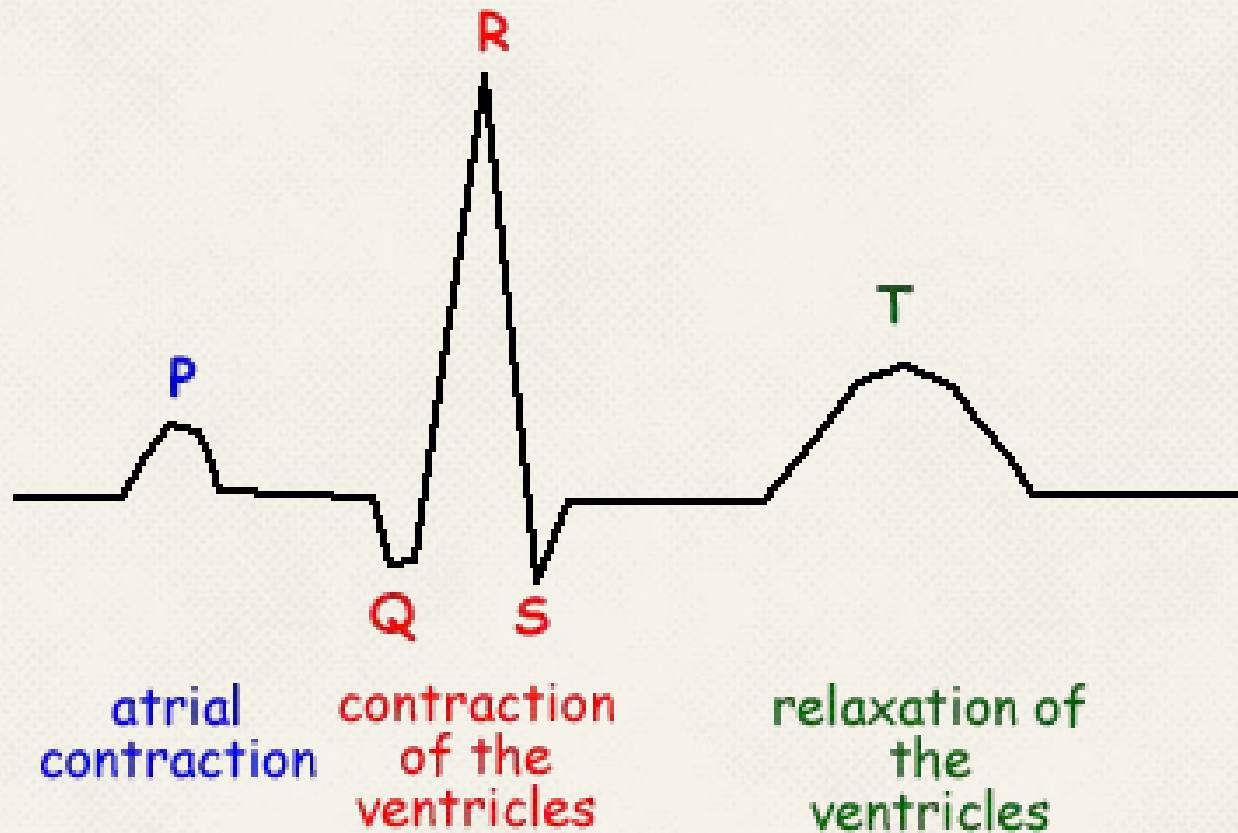


# **Ephemeral emotional states**

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*An exploration in ECG correlates*

## PQRST WAVE



## MOTIVATION

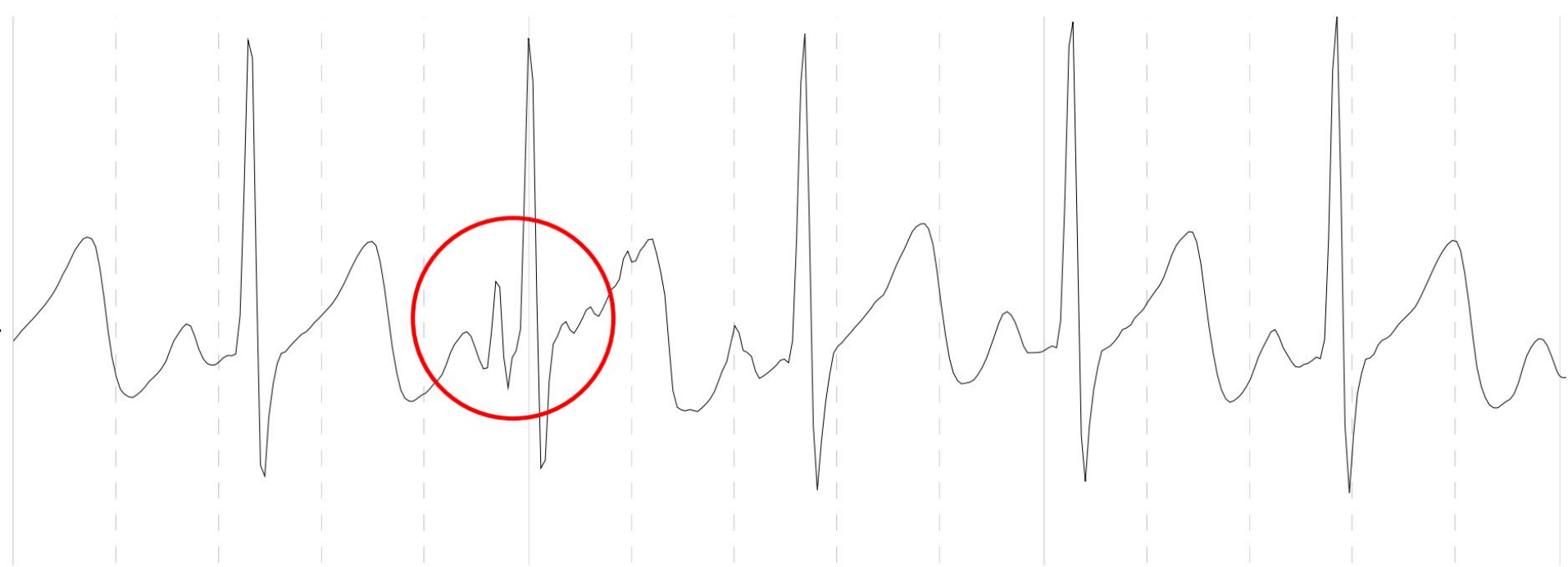
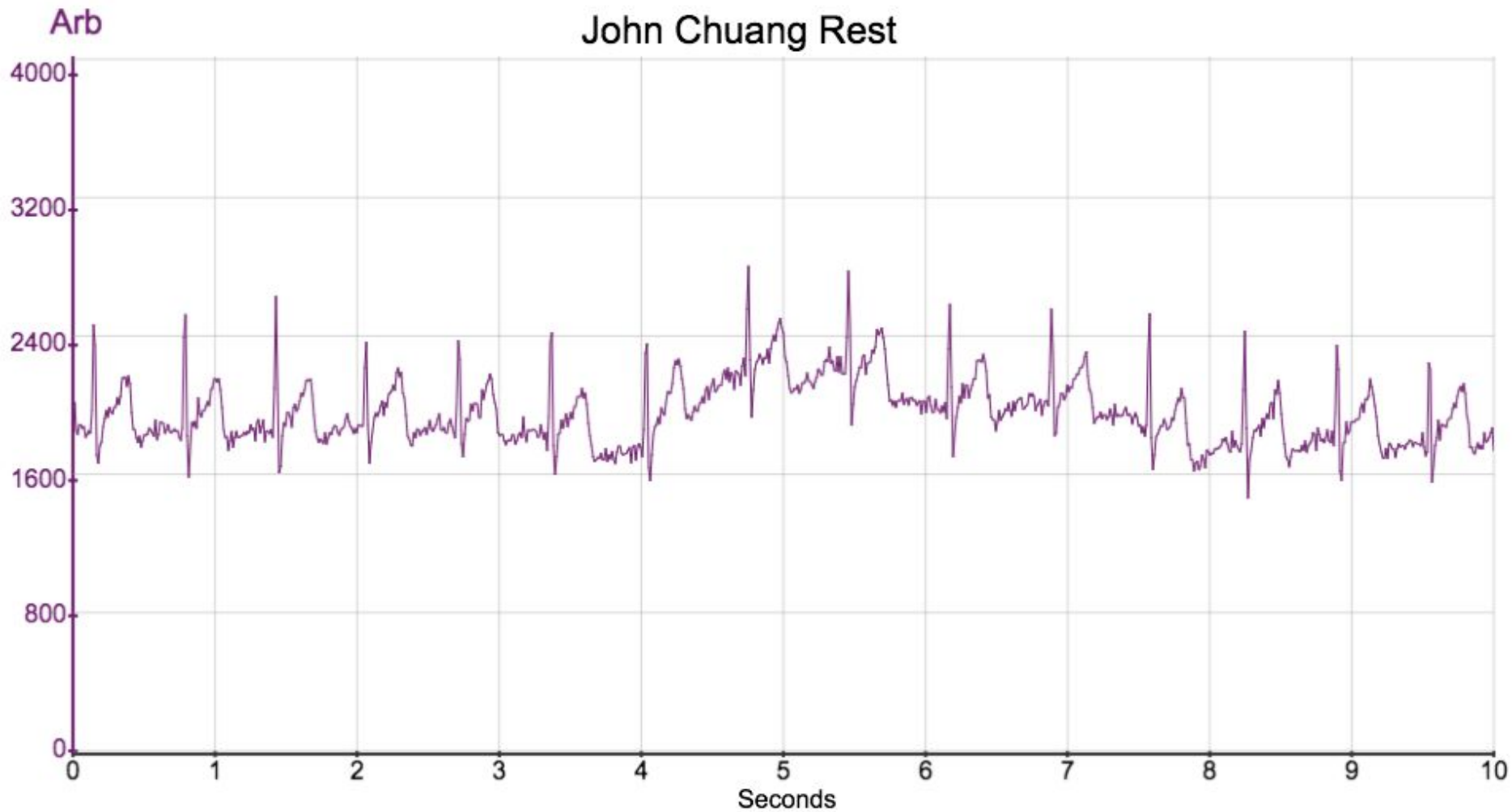


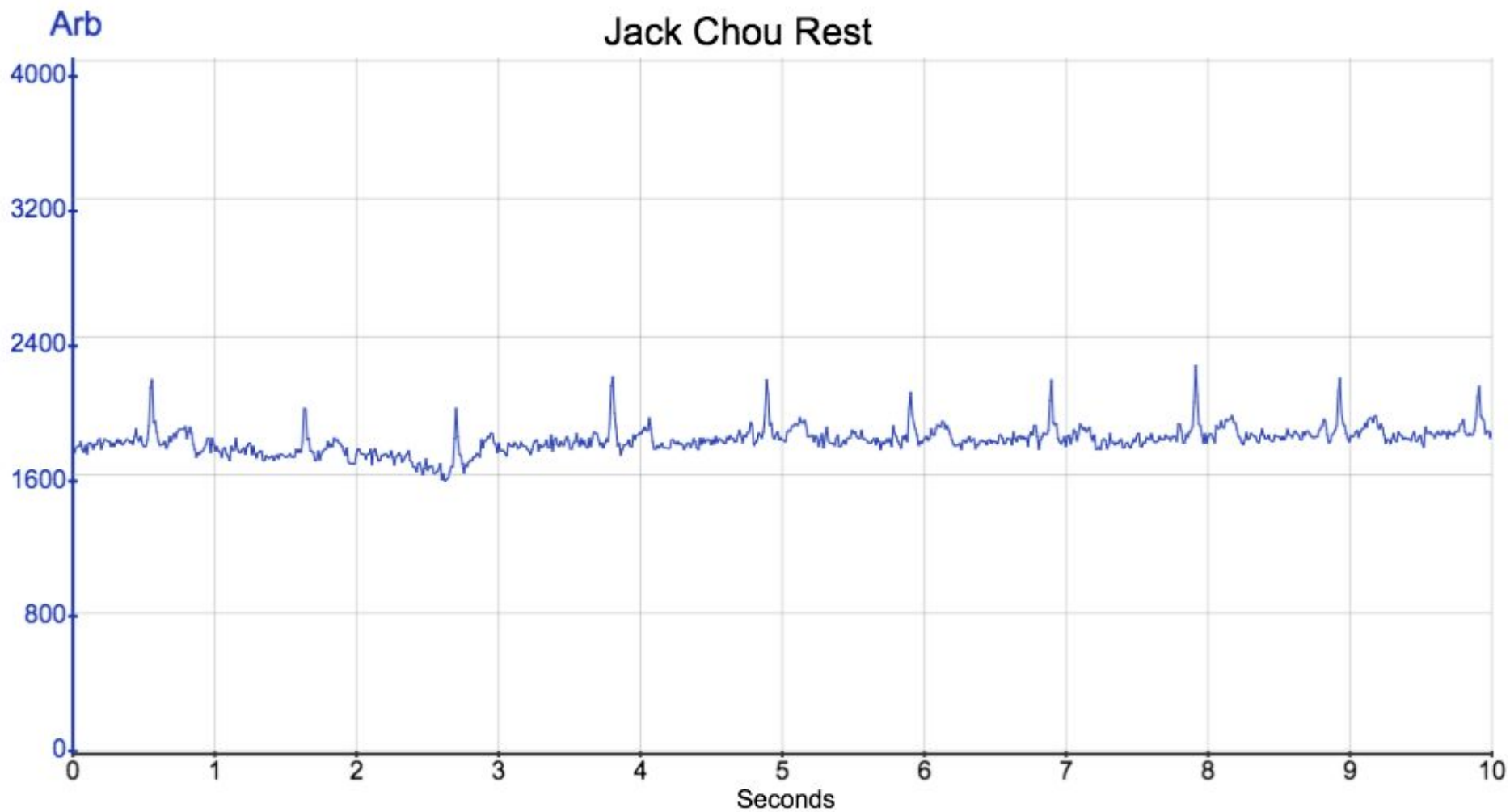
Figure 4: Multiple P waves were observed at the point of shocking.

# RESTING ECG

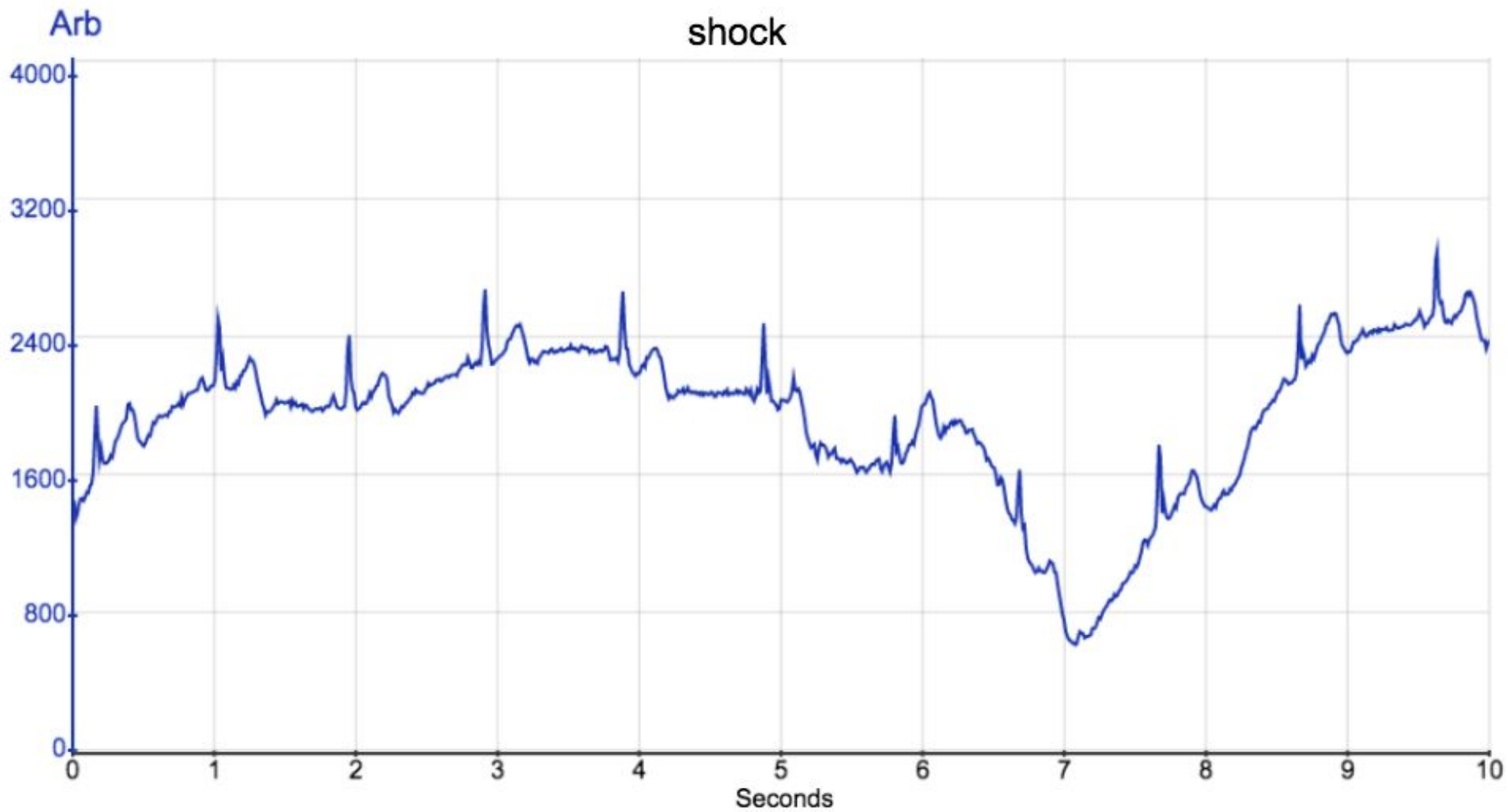




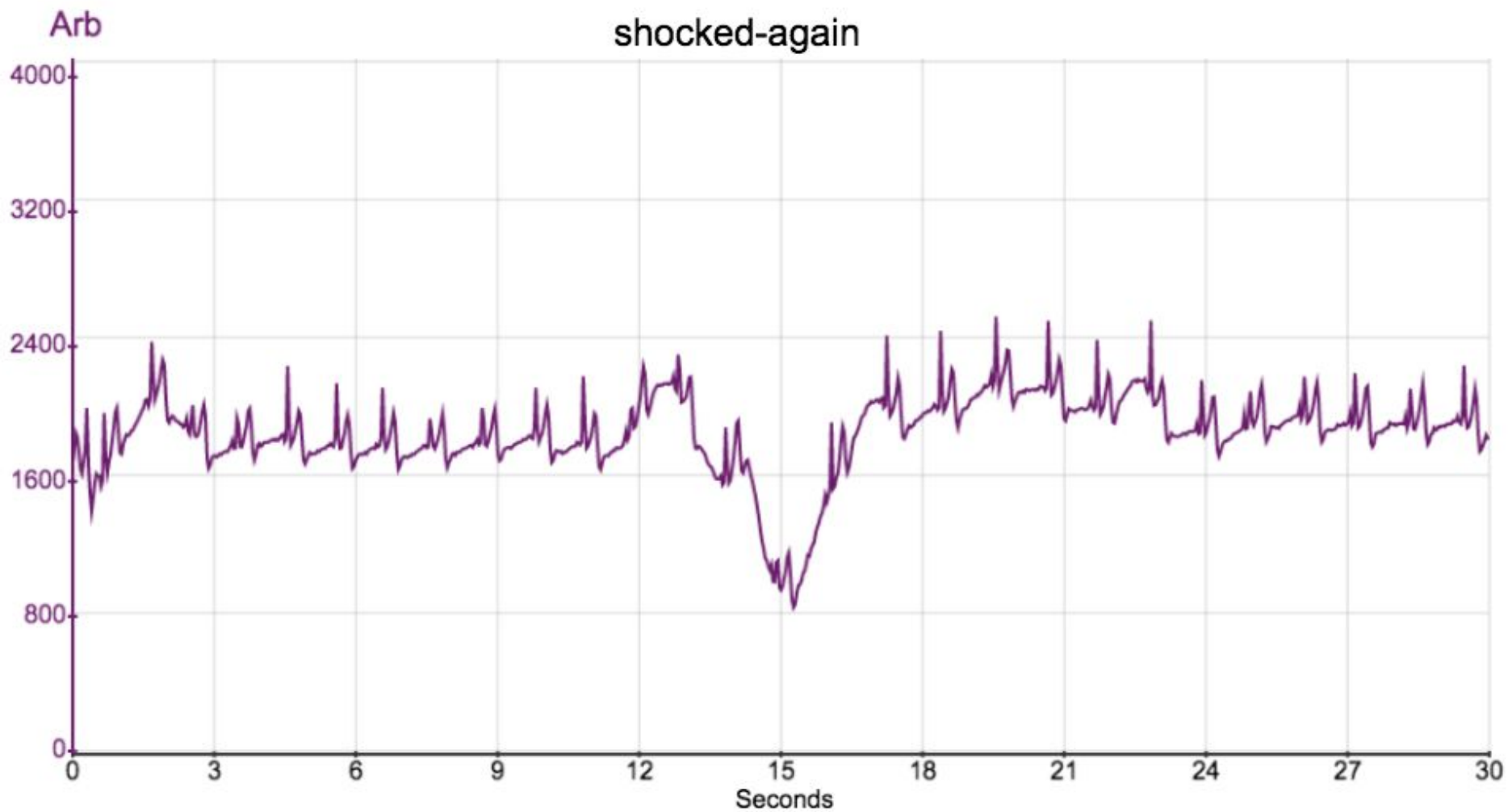
# RESTING ECG



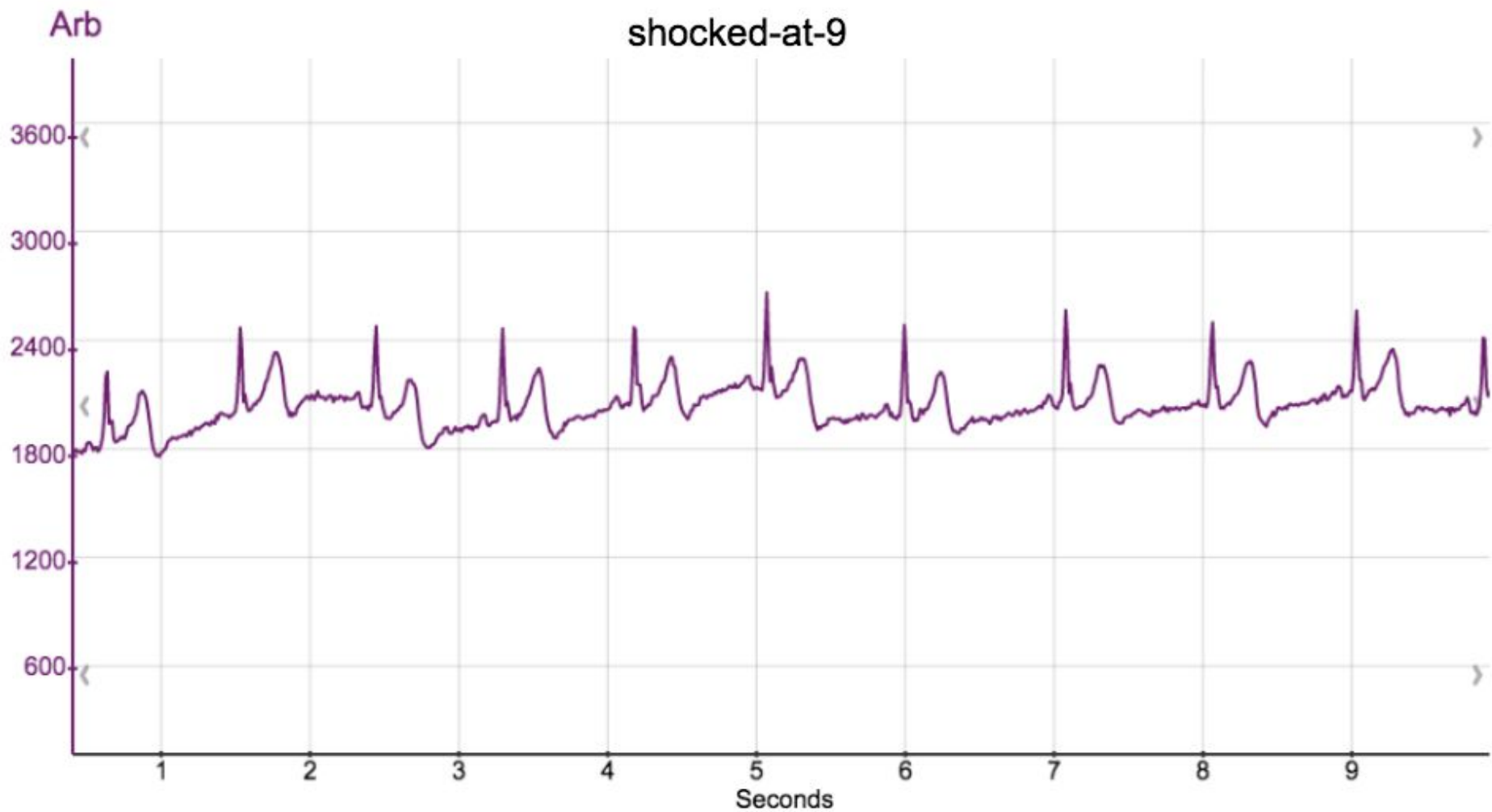
# FIRST SHOCK



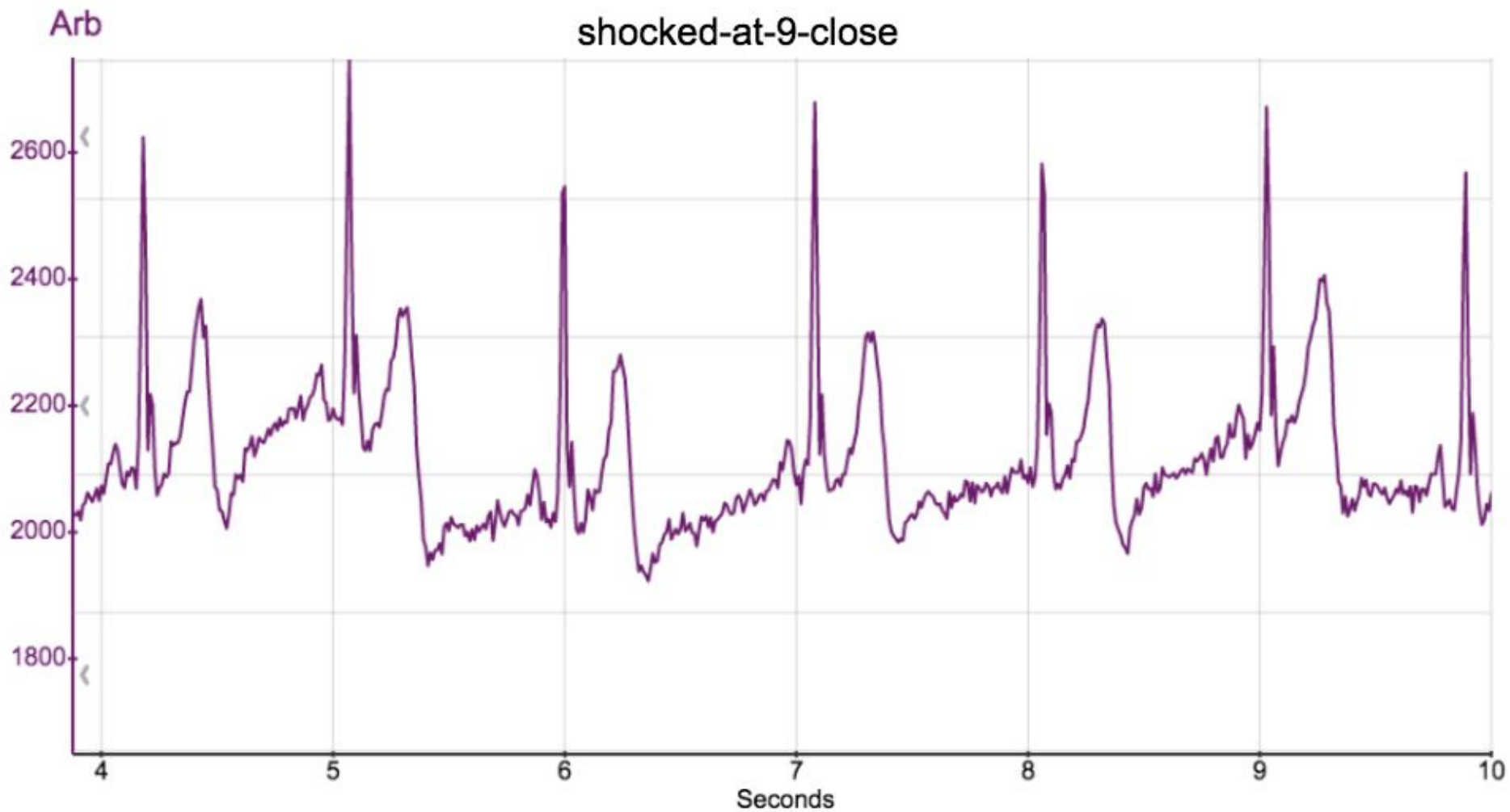
## SECOND SHOCK



## THIRD SHOCK

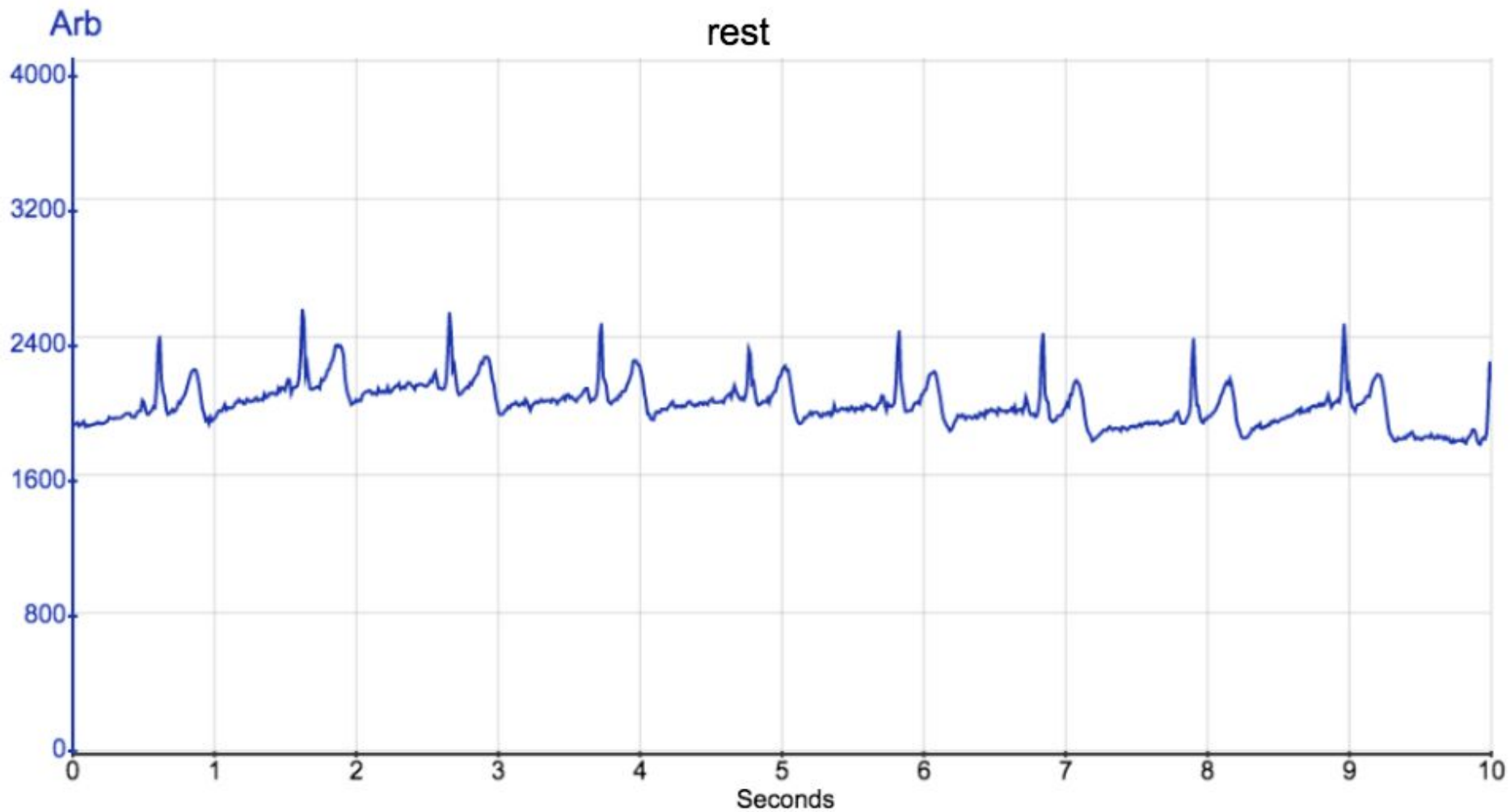


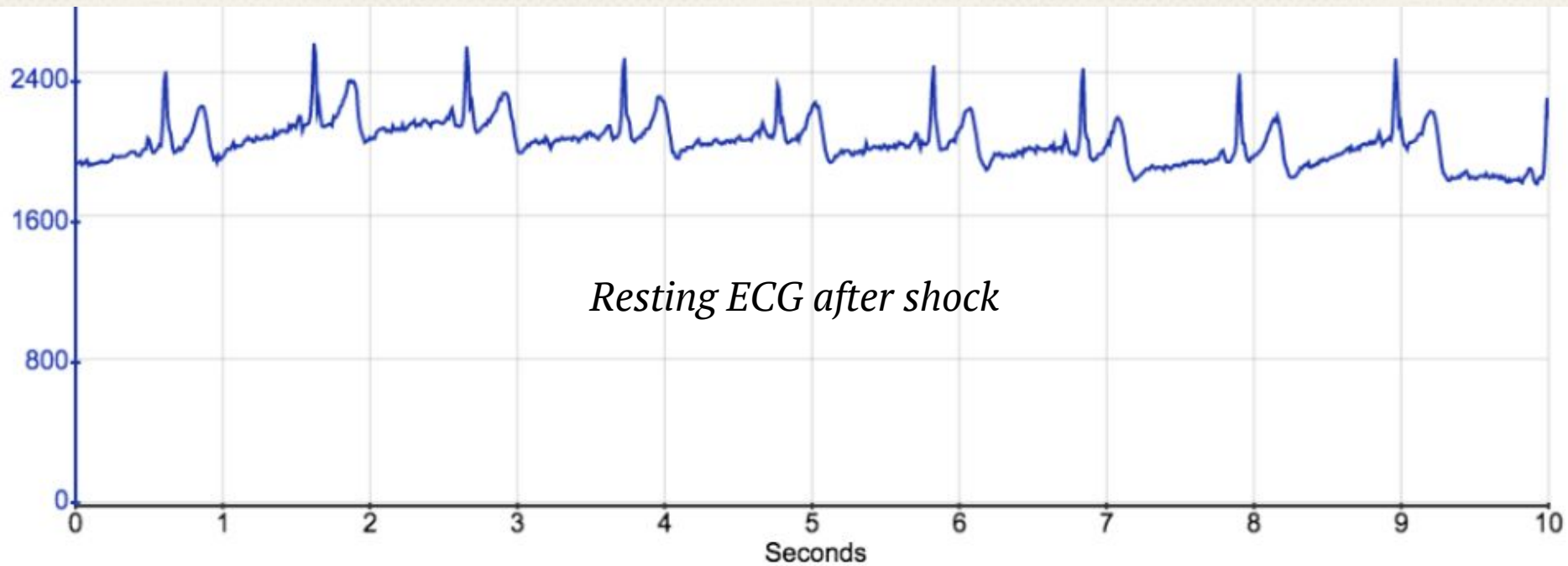
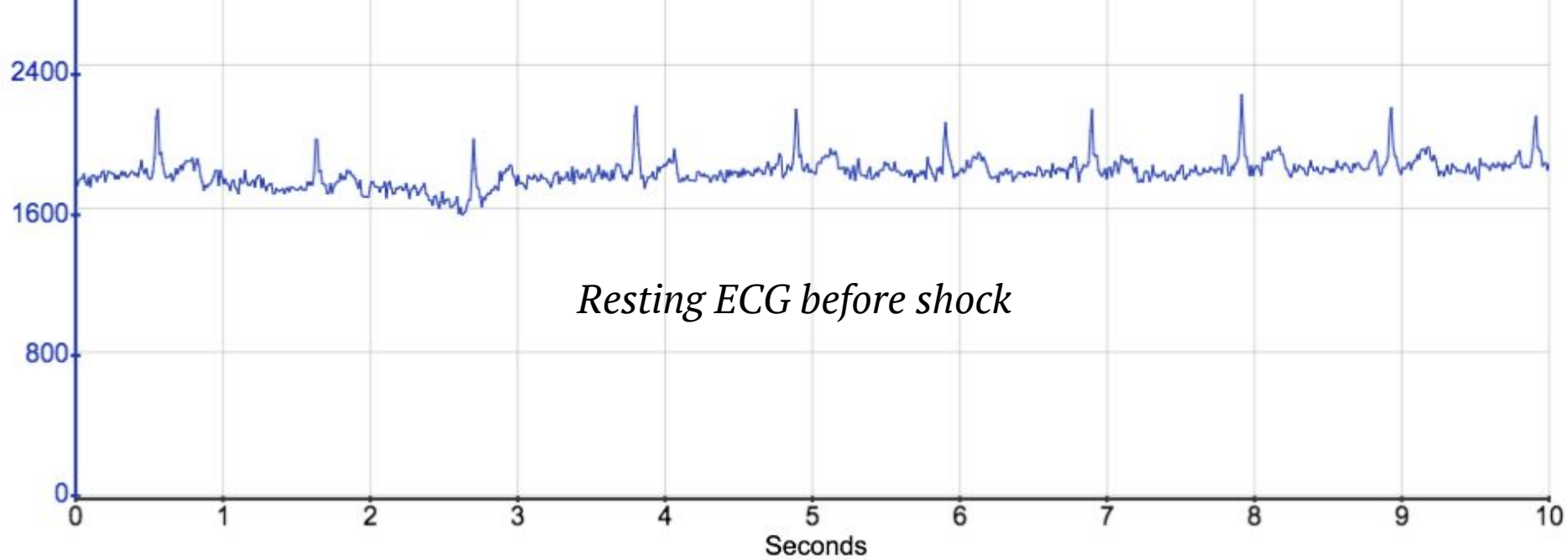
## CLOSEUP OF THIRD SHOCK





## RESTING ECG AFTER SHOCK





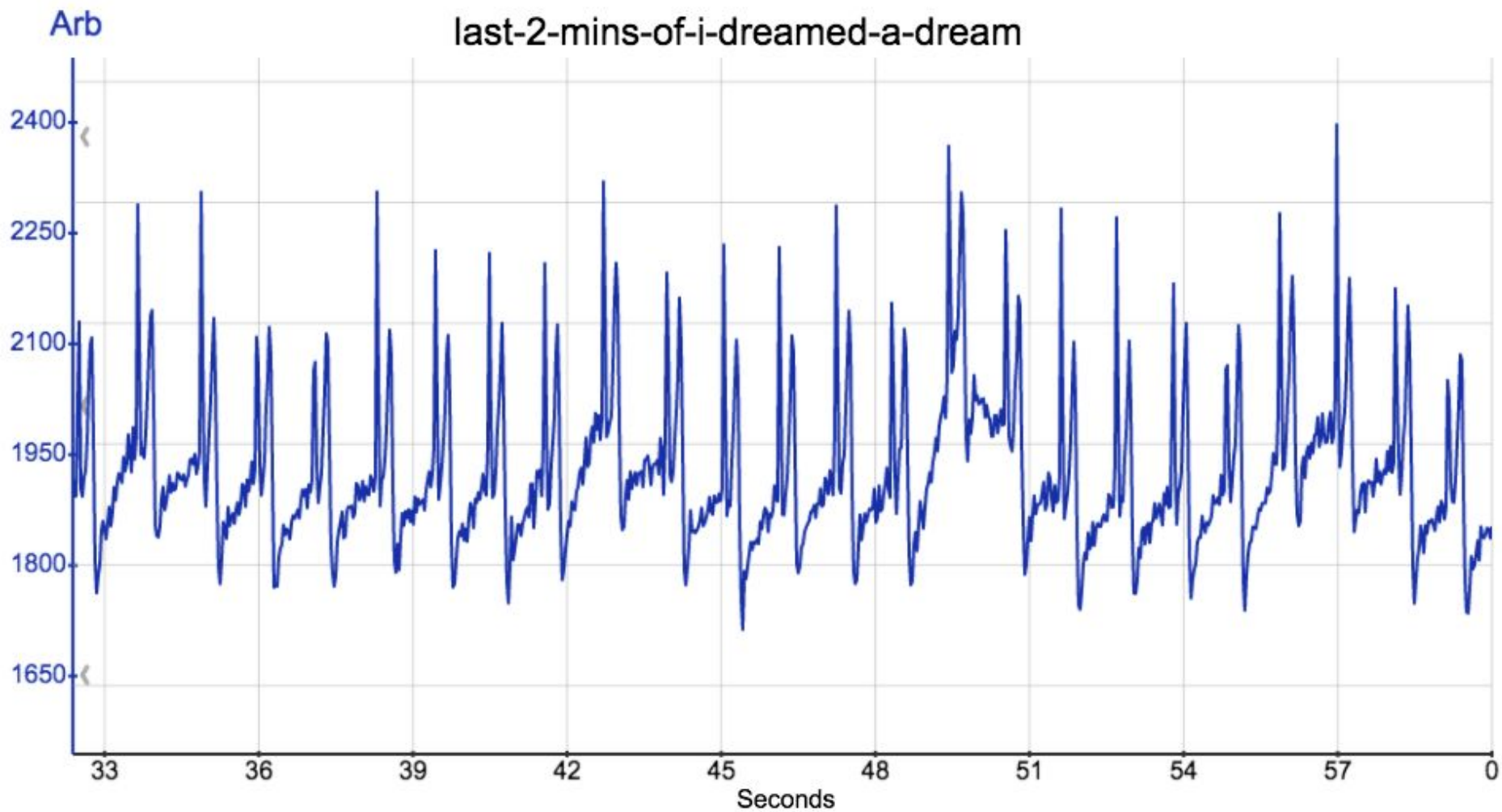


# **Sustained emotional states**

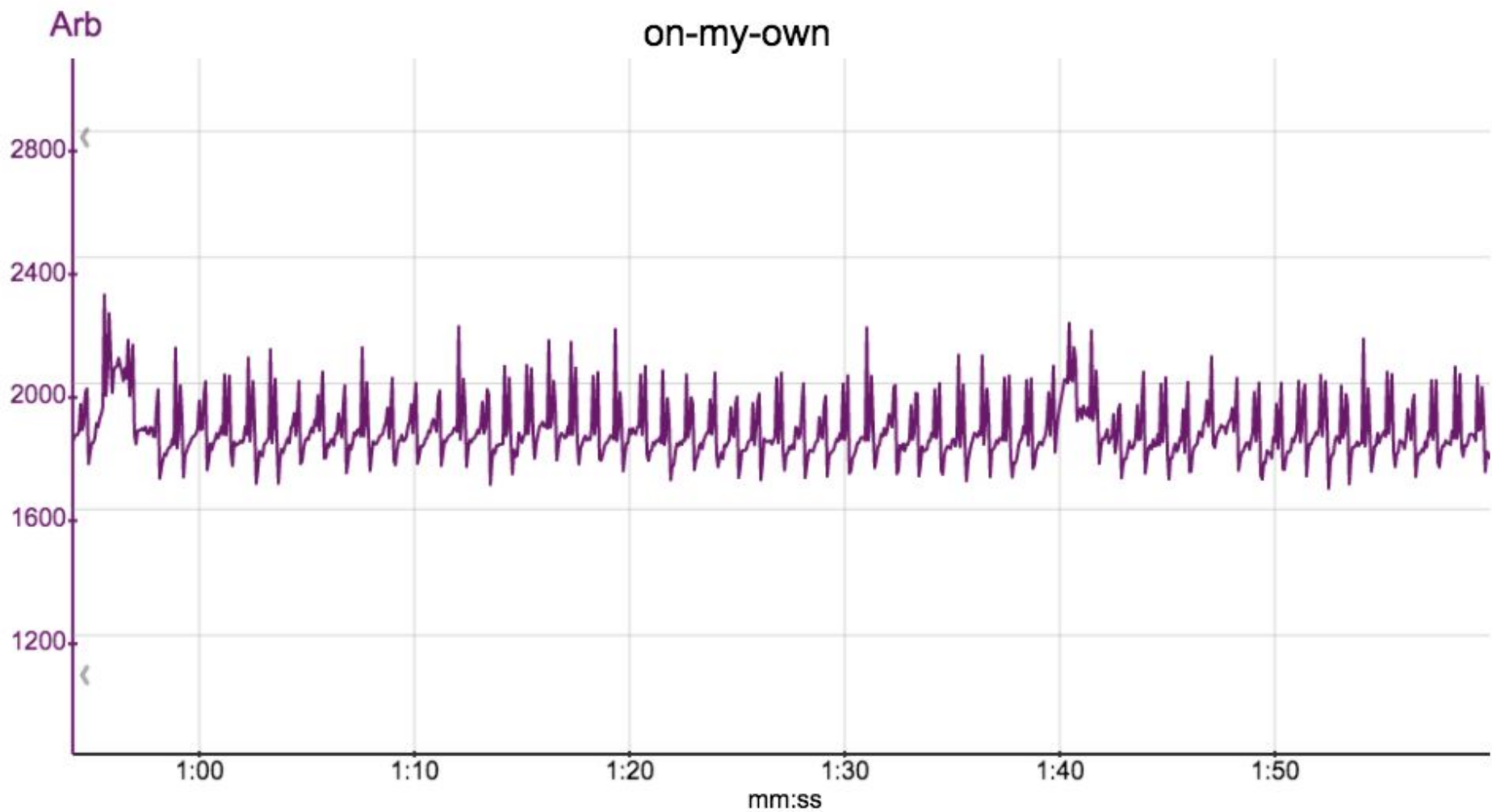
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*An exploration in ECG correlates*

# SADNESS



# SADNESS





## INSIGHTS

- Instrument sensitivity and noise
- EMG interference
- Test subject heart health and variability
- Reproducibility of ephemeral and sustained emotional states

*Thanks!*