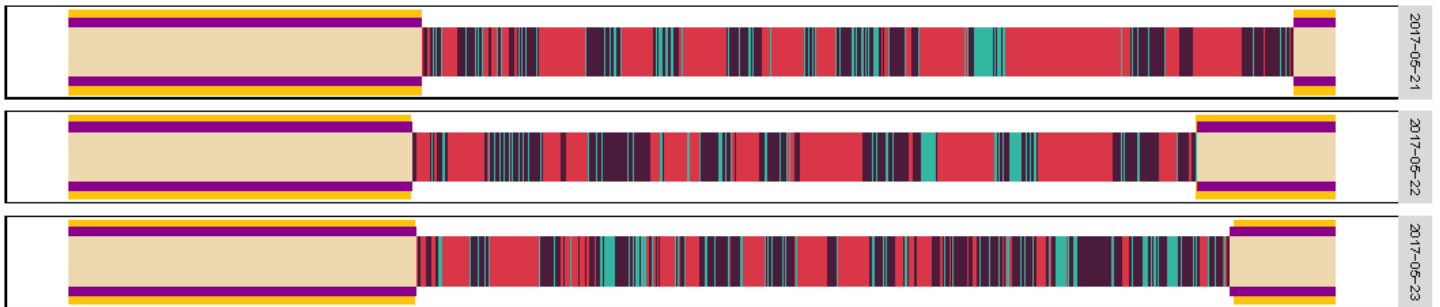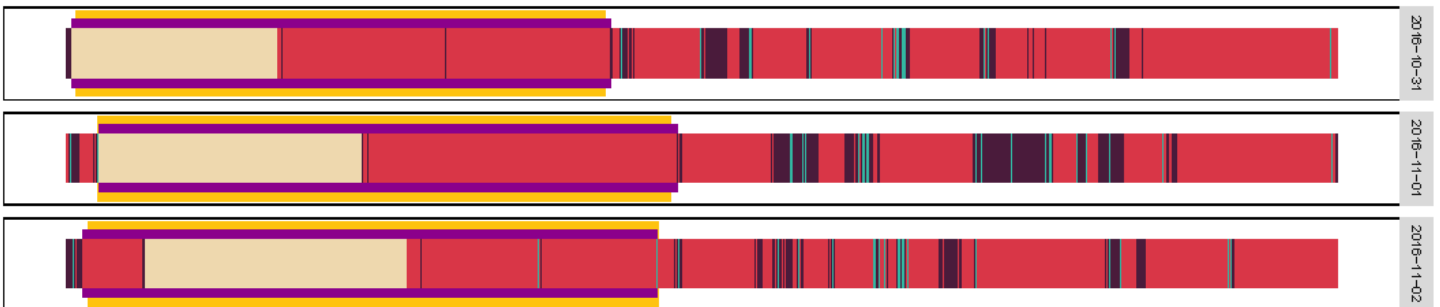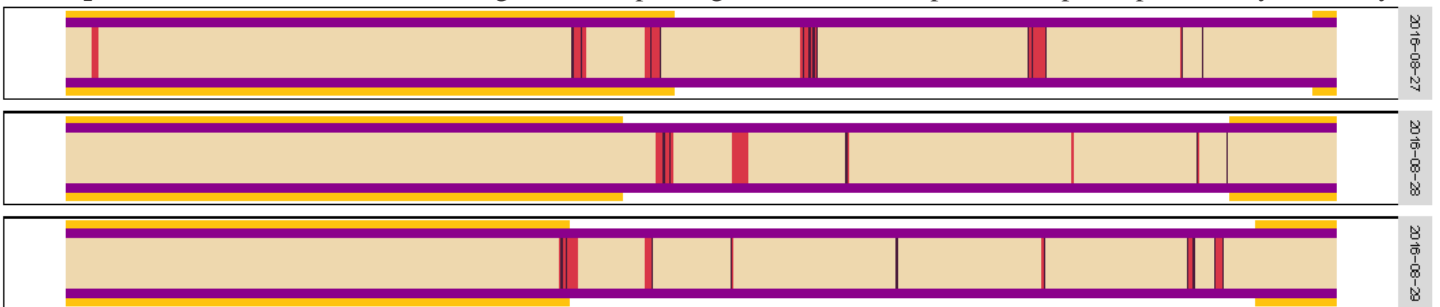**Participant A.** Both CREA and ProcessingPAL have almost perfect agreement with sleep diaries
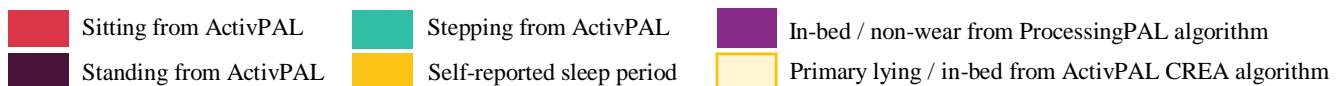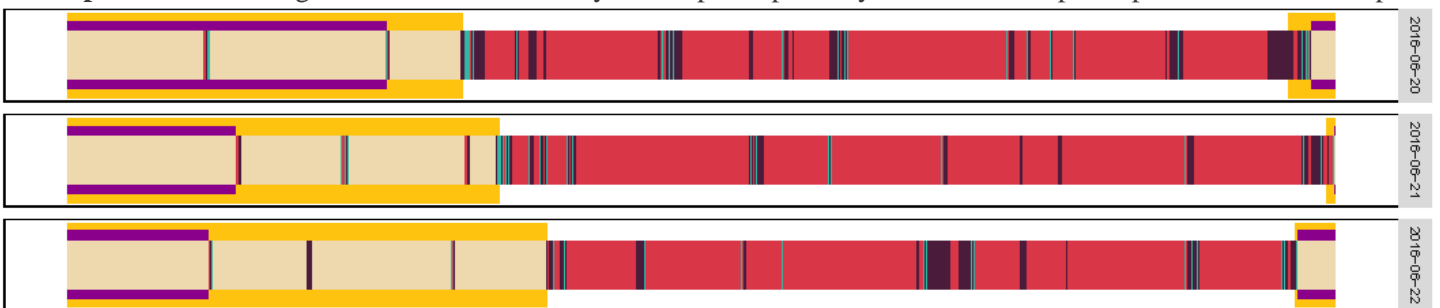

Participant B. ProcessingPAL has better agreement with sleep diaries than CREA

Participant C. Both CREA and ProcessingPAL have poor agreement with sleep diaries – participant is very sedentary

Participant D. ProcessingPAL has more variability within participant days than CREA – participant is a restless sleeper

Legend:
- Sitting from ActivPAL
- Standing from ActivPAL
- Stepping from ActivPAL
- Self-reported sleep period
- In-bed / non-wear from ProcessingPAL algorithm
- Primary lying / in-bed from ActivPAL CREA algorithm

Supplementary Figure 1. Sample heat maps of participant's postures from ActivPAL with overlaid self-reported in-bed periods and predicted in-bed / non-wear periods. Each panel represents data from one participant; each rectangle is one 24-hour day. The horizontal outer bars represent sleep diaries (yellow bar), ProcessingPAL in-bed / invalid time (purple bars). The horizontal inner bars represent ActivPAL posture data from CREA; sitting posture is defined as sitting or travelling or secondary lying (red), standing (dark blue), stepping is defined as stepping or cycling (aquamarine) and primary lying (light yellow).