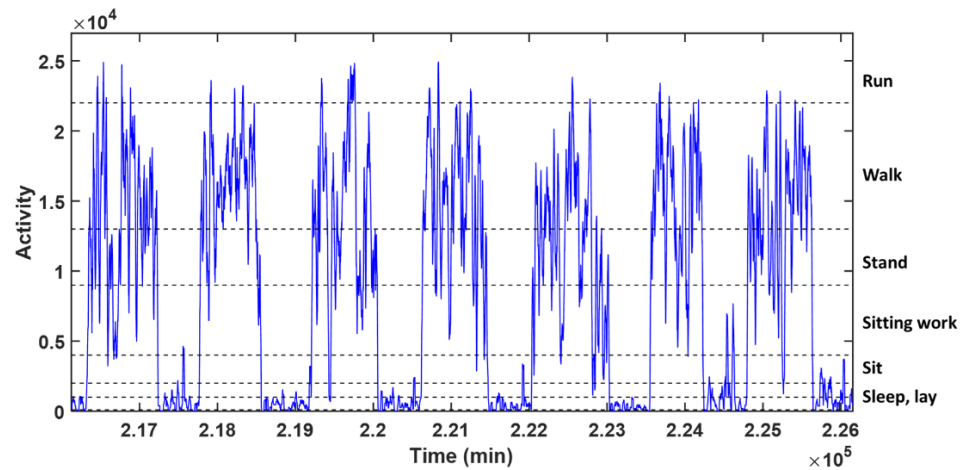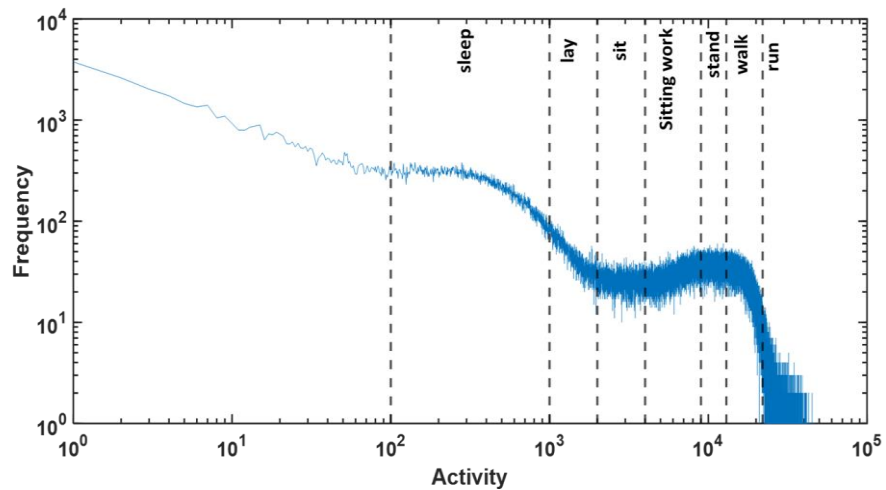# Supplementary Information

Linking Activity Patterns and Mood States in Bipolar Disorder: A Longitudinal Case Study based on Actigraphy Signals

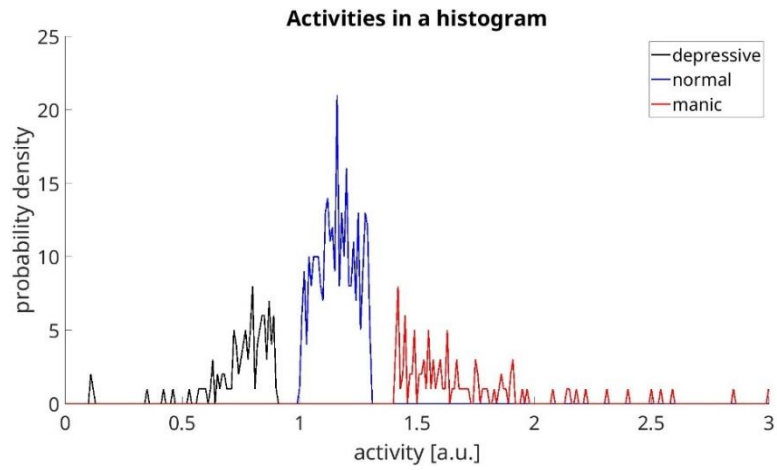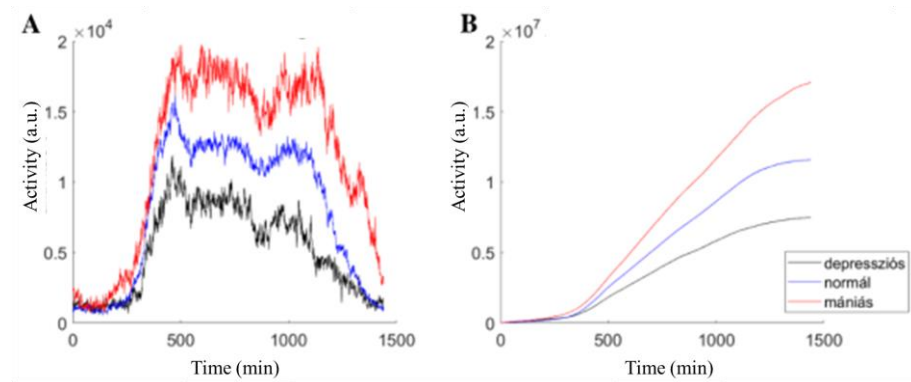**Zsófia Pákozdi, András Búzás[*], István Szendi, László B. Kish and András Dér**

Figure S1. A typical time series of a week-long recording (7 consecutive days and nights). Signal levels associated to some typical daily-routine task groups, according to our classification, as refined by the data of Figure S2.
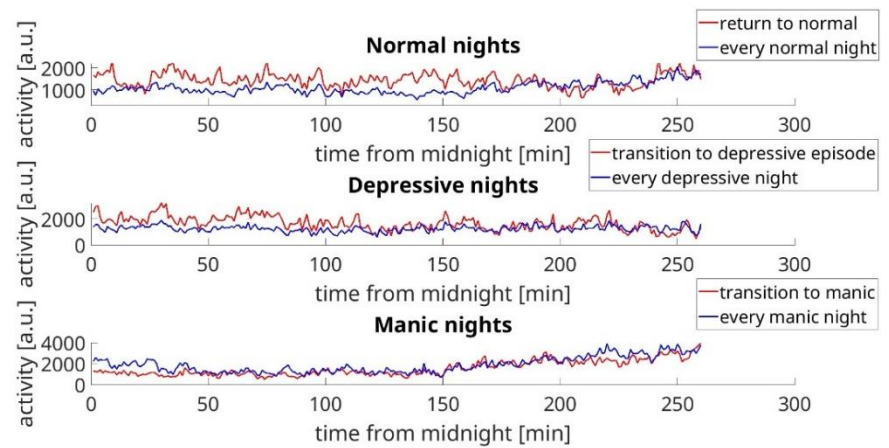

Figure S2. Distribution of activities in the 10-min time window for all the 625 days. The peaks and shoulders of the distribution function correspond to task groups specified in Figures S1 and S2, and the borders between typical activity groups can be approximated by the inflection points of the distribution function.
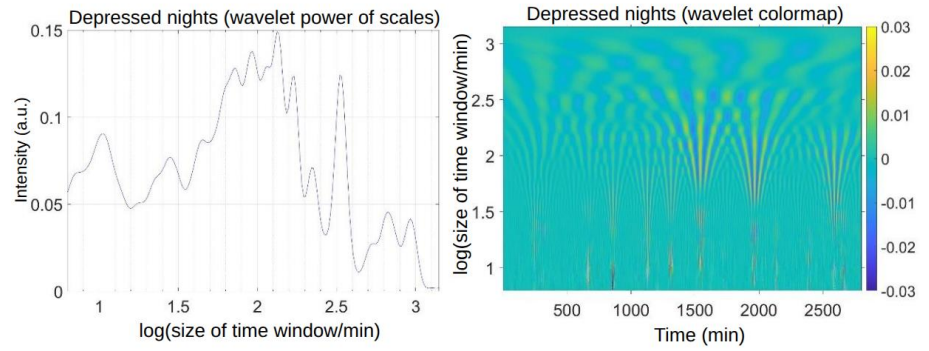
Figure S3. Representation of activities in a histogram, excluding overlapping areas between groups
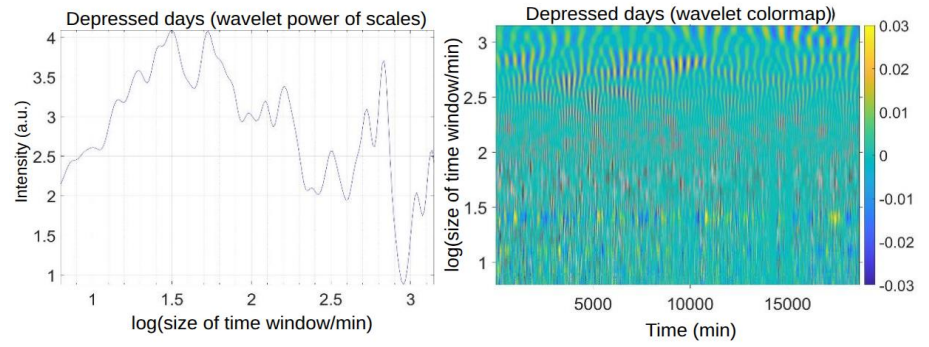

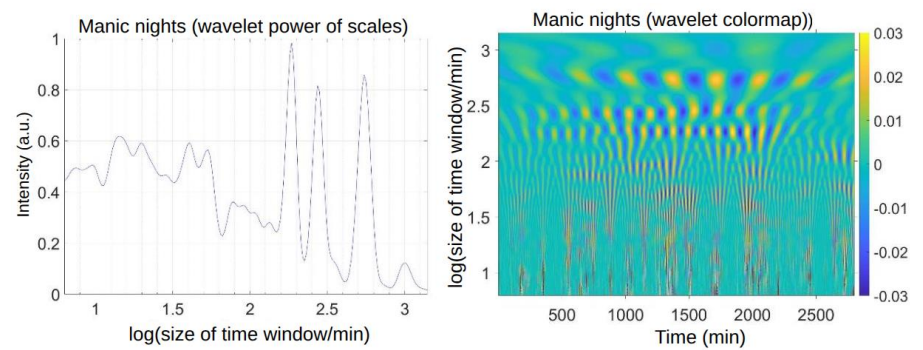**Figure S4.** Representation of activities for the full day

Figure S5. Average nocturnal activity from midnight, comparing all nights and nights before transitions
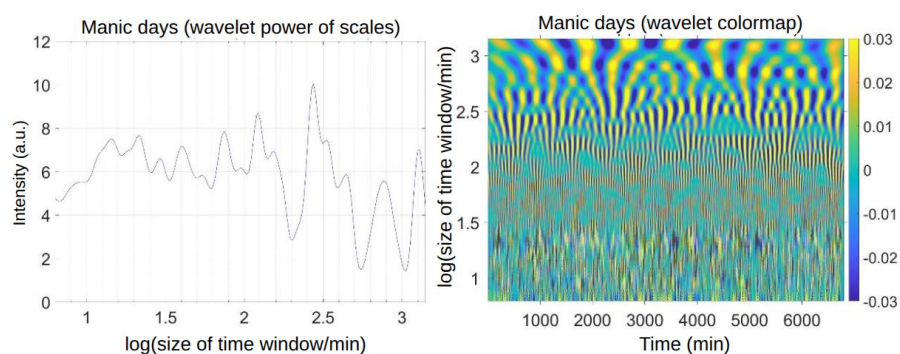
Figure S6. Continuous wavelet analysis of depressed nighttime activities. Left insert: Intensities versus log(size of time-window); Right insert: Structure map of nighttime activity data of 5 concatenated consecutive days.

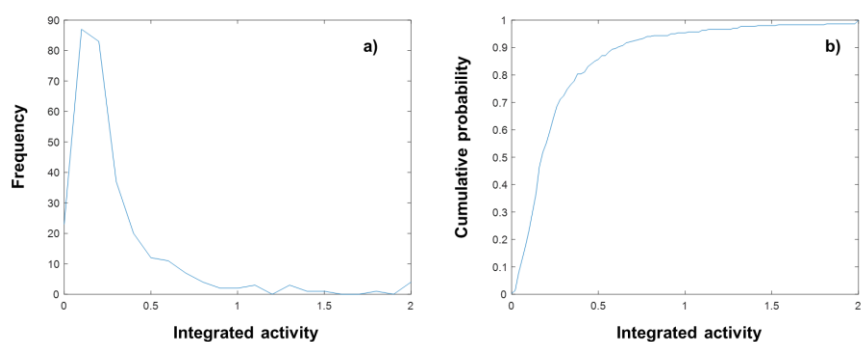**Figure S7.** Continuous wavelet analysis of depressed daytime activities. Left insert: Intensities versus log(size of time-window); Right insert: Structure map of daytime activity data of 5 concatenated consecutive days.

Figure S8. Continuous wavelet analysis of manic nighttime activities. Left insert: Intensities versus log(size of time-window); Right insert: Structure map of nighttime activity data of 5 concatenated consecutive days.

Figure S9. Continuous wavelet analysis of manic daytime activities. Left insert: Intensities versus log(size of time-window); Right insert: Structure map of daytime activity data of 5 concatenated consecutive days.

Figure S10. Probability density function (PDF, a) and Cumulative density function (CDF, b) of the integrated activities for the ROI of the wavelet time windows, as defined in Figure 9 of the paper. (Integrated activities and Frequencies in arbitrary units, while Cumulative probabilities in relative units, respectively.)

Table S1. Transition days selected on the basis of the map in Figure 2.

Switch to Depression	Switch to Mania
22-May-2002	27-Jul-2001
06-Aug-2002	13-Aug-2001
31-Jan-2003	08-Sep-2001
22-Aug-2004	20-Mar-2002
21-Nov-2004	19-Apr-2002
01-Dec-2004	13-Aug-2002
08-Dec-2004	01-Sep-2002
12-Jan-2005	07-Mar-2003
	15-Aug-2003