

# Sleep Study

2025-09-04

## Introduction

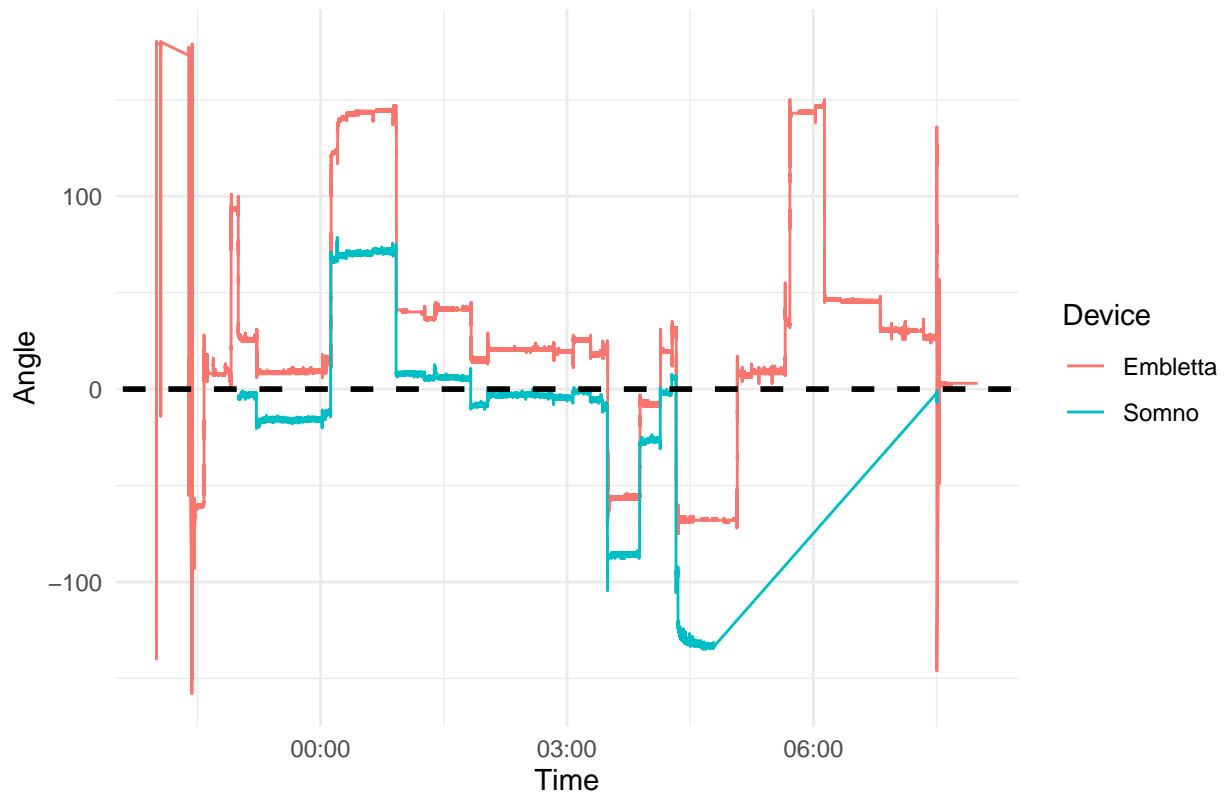
A student in the Yale School of Medicine is planning a study to compare a promising new iPhone/iTouch App (called SomnoPose) to a customized medical device (called the Embletta) for monitoring sleeping position. She's not actually interested in sleep, but is studying eye health. Her long-term research plan is to explore whether pressure on the eyes (perhaps due to sleeping position) could be related to various aspects of eye health. For example, a patient who sleeps almost exclusively on his/her left side might be placing pressure on his/her left eye that is very different from the right eye. Although sleep position isn't a direct measurement of "pressure on the eye," she believes it might be a helpful indicator. The Embletta is considered to be the "gold standard" for the purpose of this study. However, the SomnoPose solution is far less expensive than the Embletta, and the iPhone/iTouch is less cumbersome to sleep with. This student agreed to conduct a pilot study before moving onto a formal study to compare these two devices.

In this report, we analyze the data from the pilot study to determine how well the SomnoPose data compare to the Embletta data, and whether a formal study is warranted.

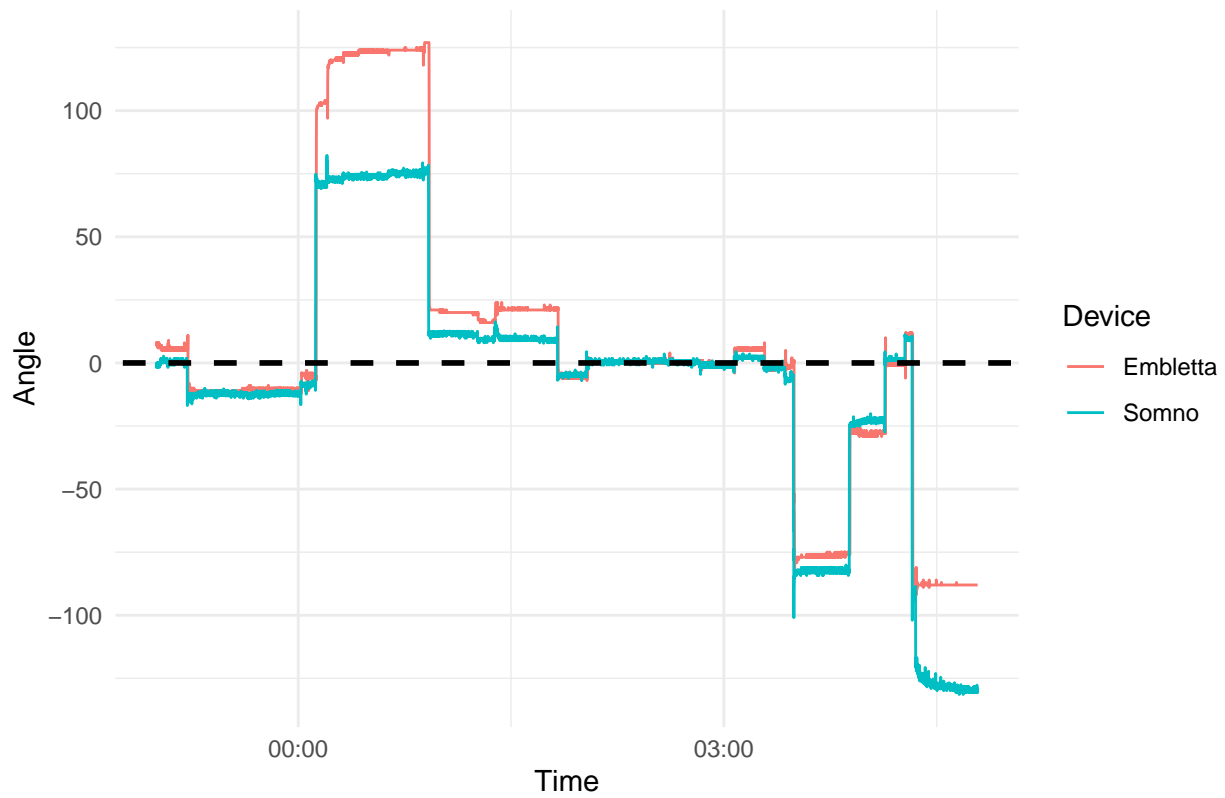
# Analysis

November 15

Angle Over Time by Device 11/15

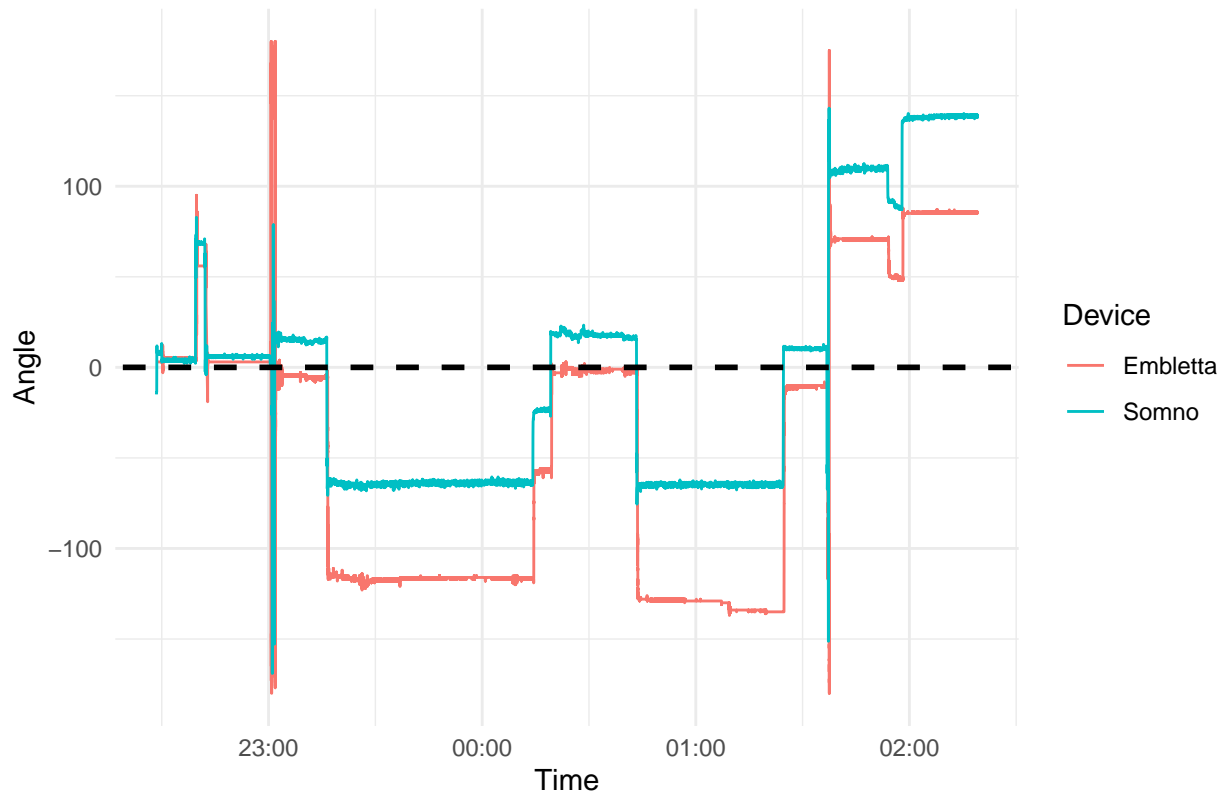


Adjusted Angle Over Time by Device 11/15

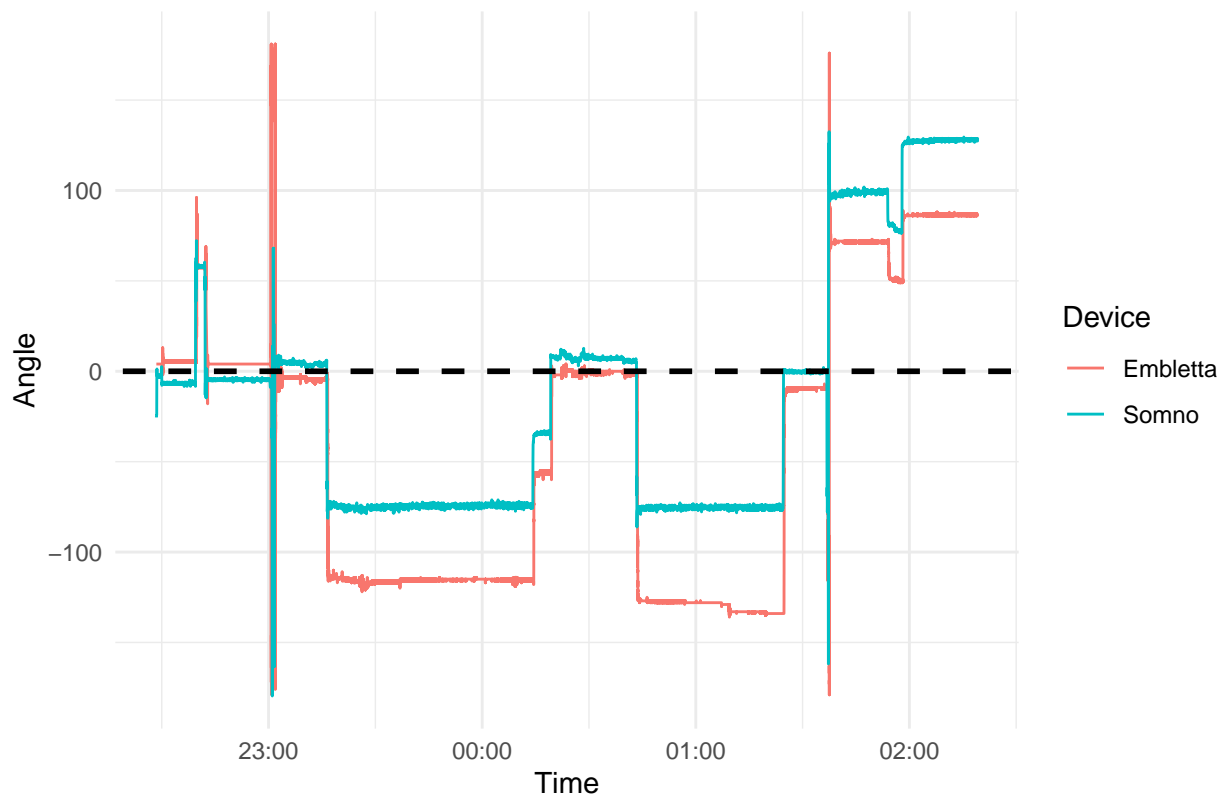


November 17

Angle Over Time by Device 11/17

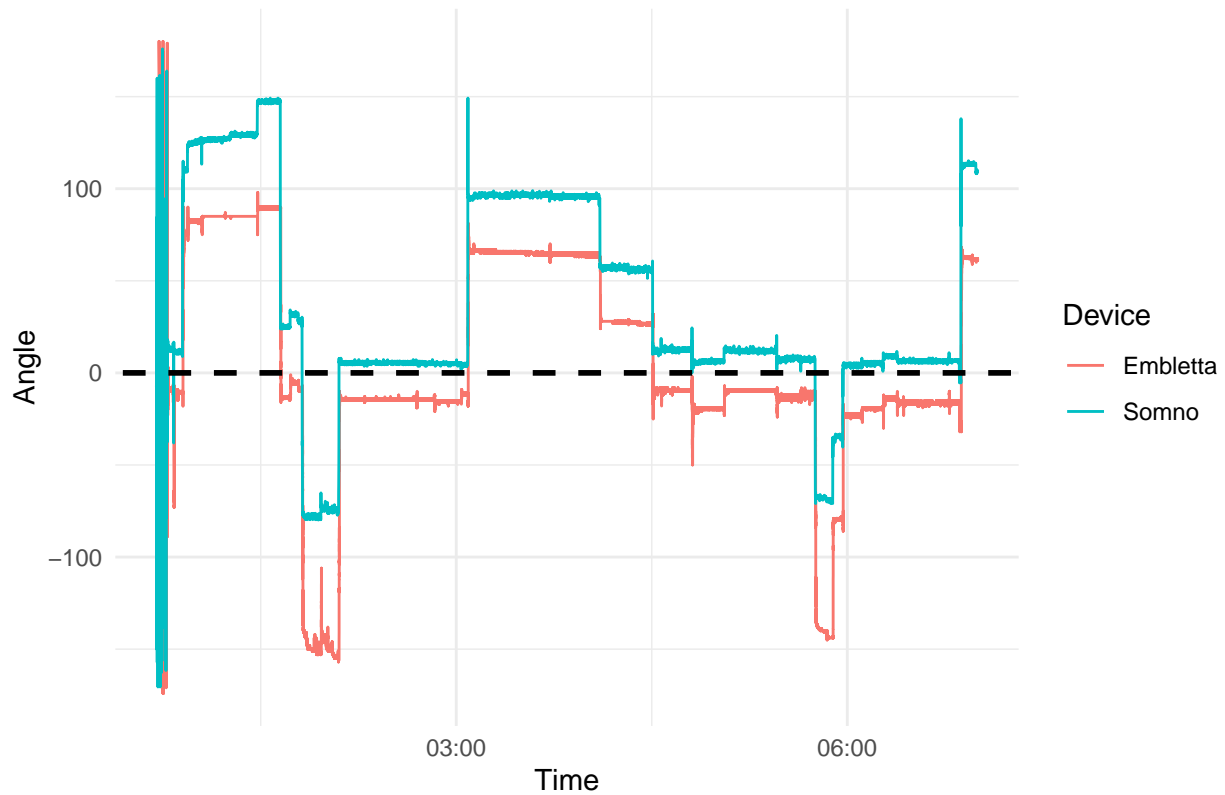


Adjusted Angle Over Time by Device 11/17

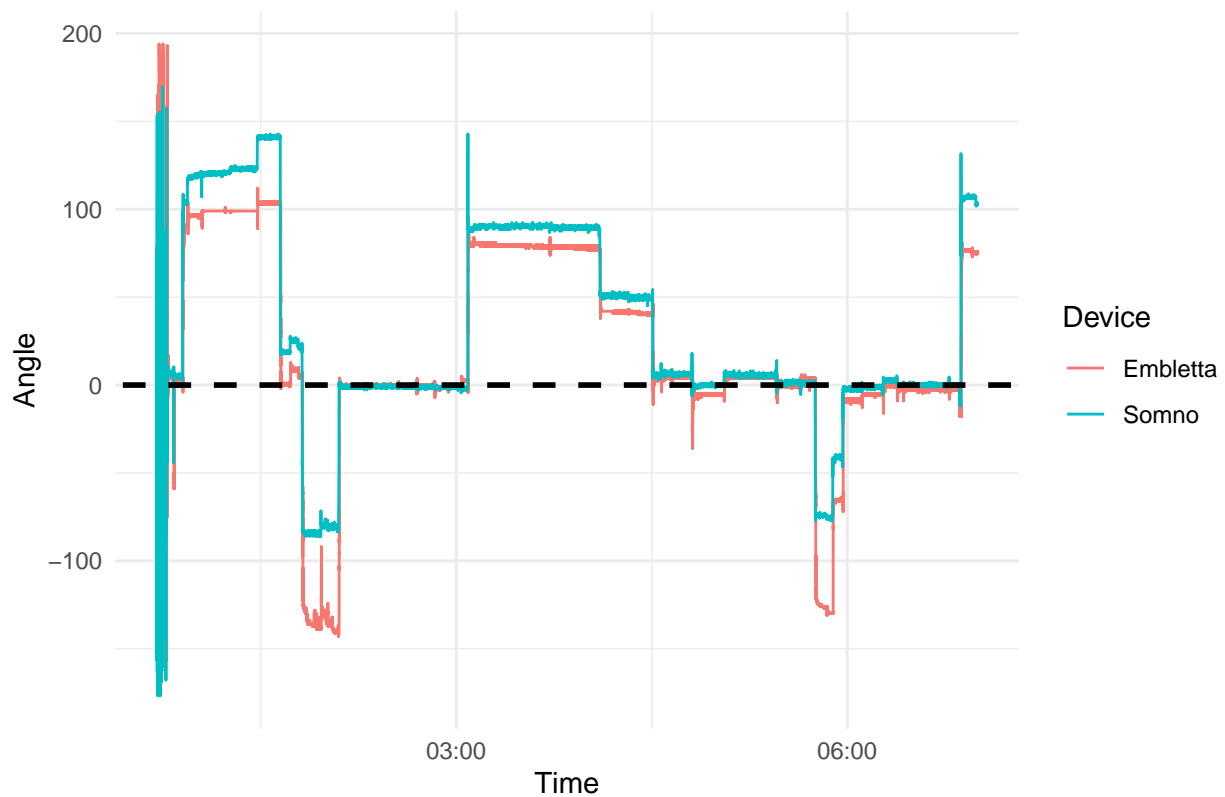


November 18

Angle Over Time by Device 11/18

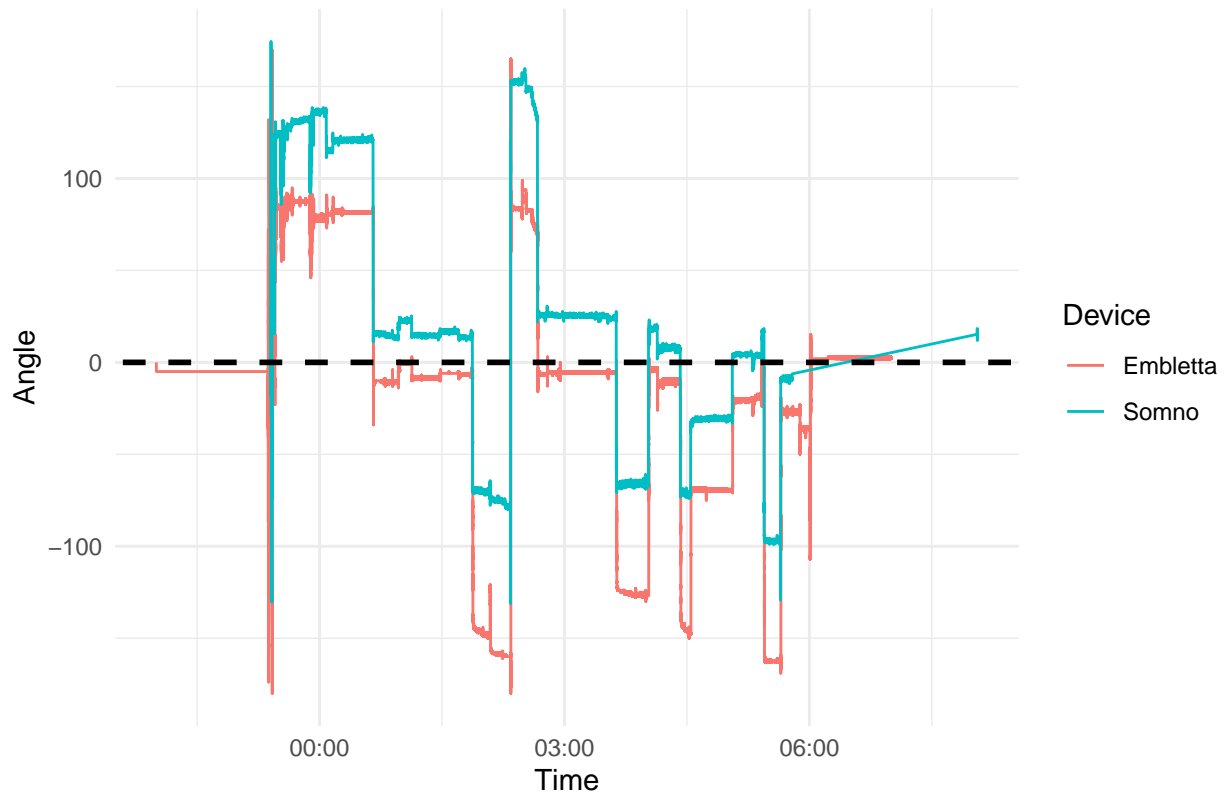


Adjusted Angle Over Time by Device 11/18

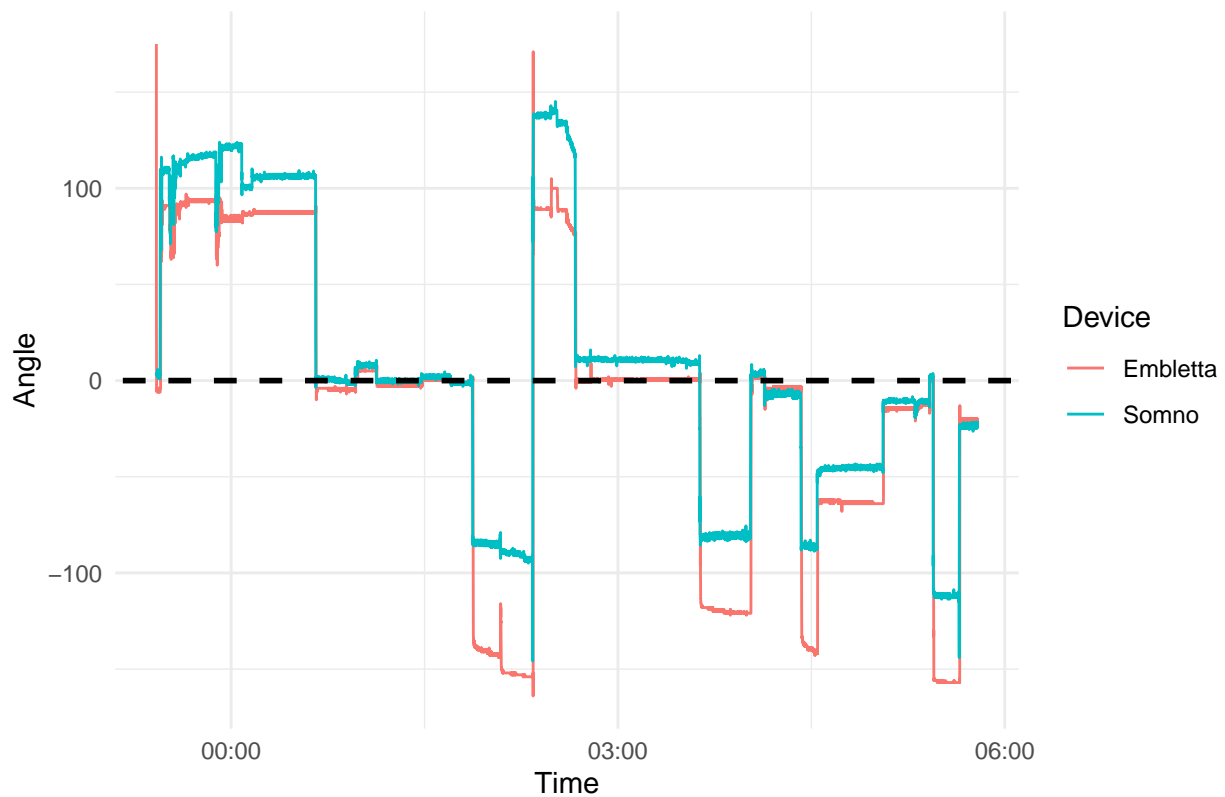


November 19

Angle Over Time by Device 11/19

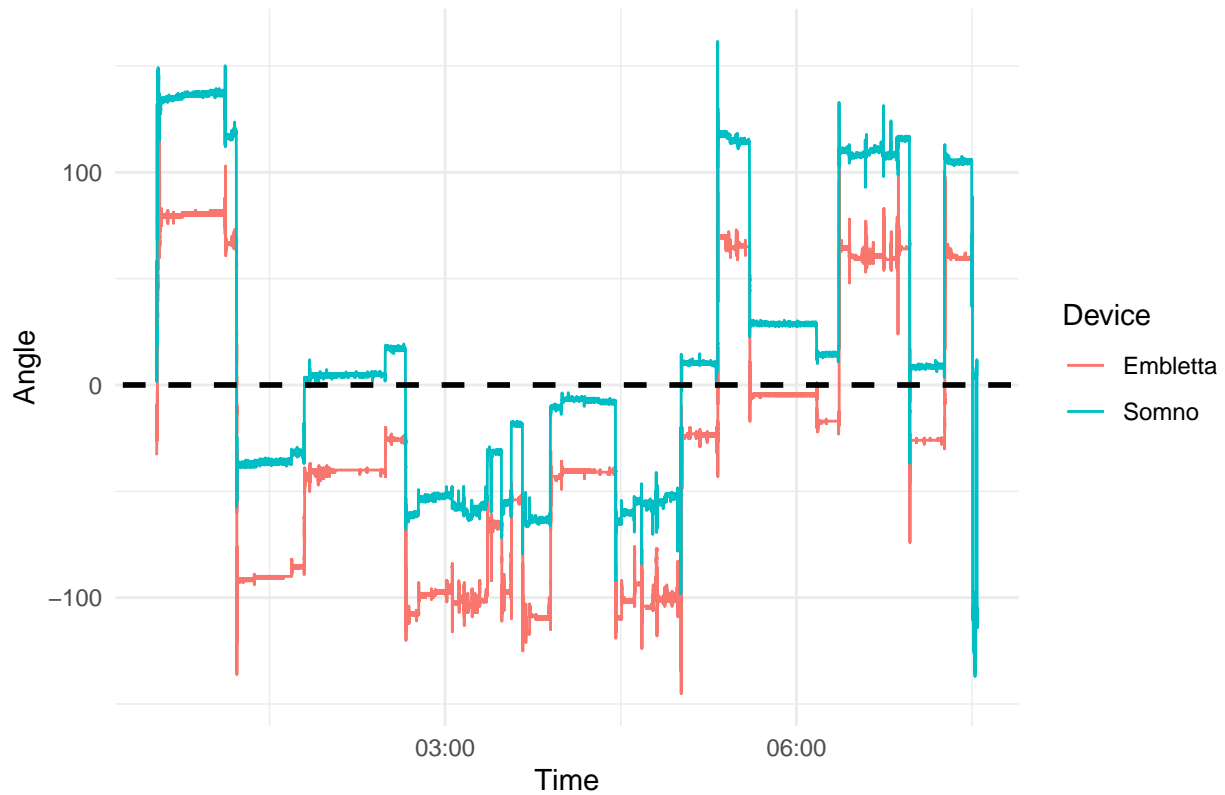


Adjusted Angle Over Time by Device 11/19

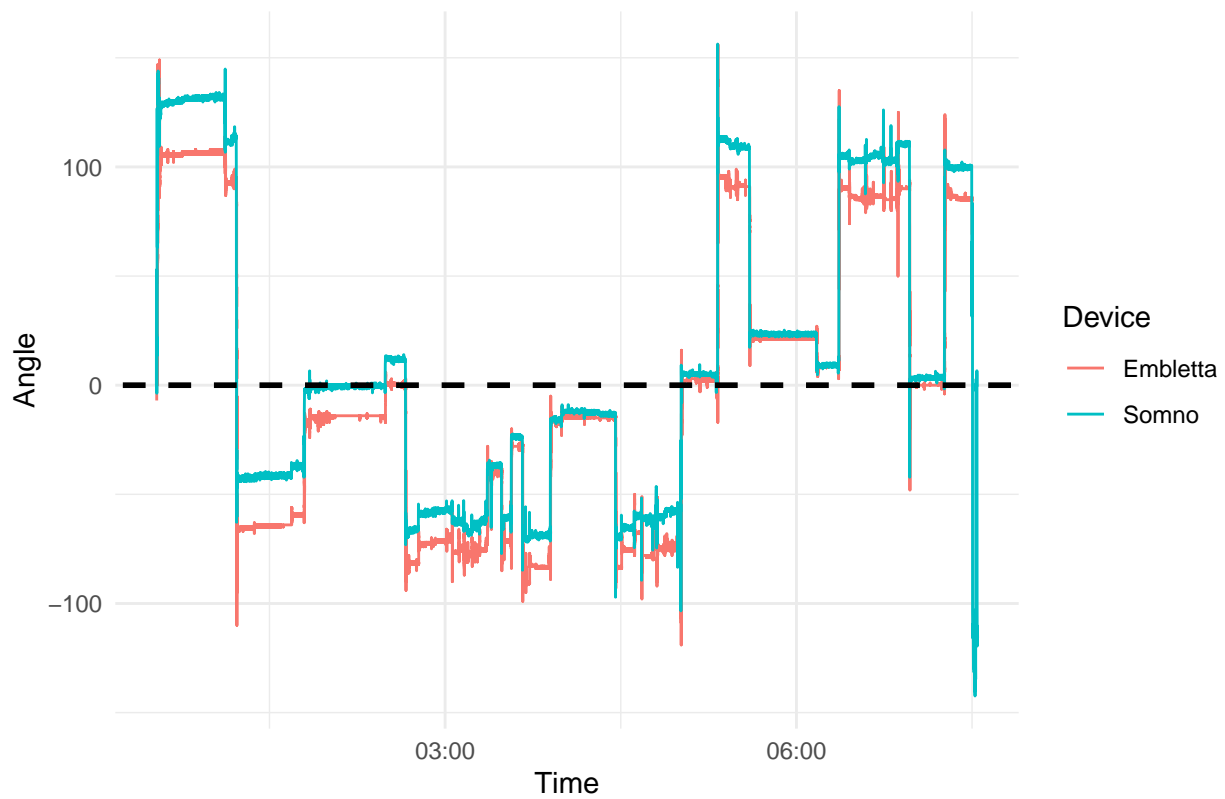


November 23

Angle Over Time by Device 11/23

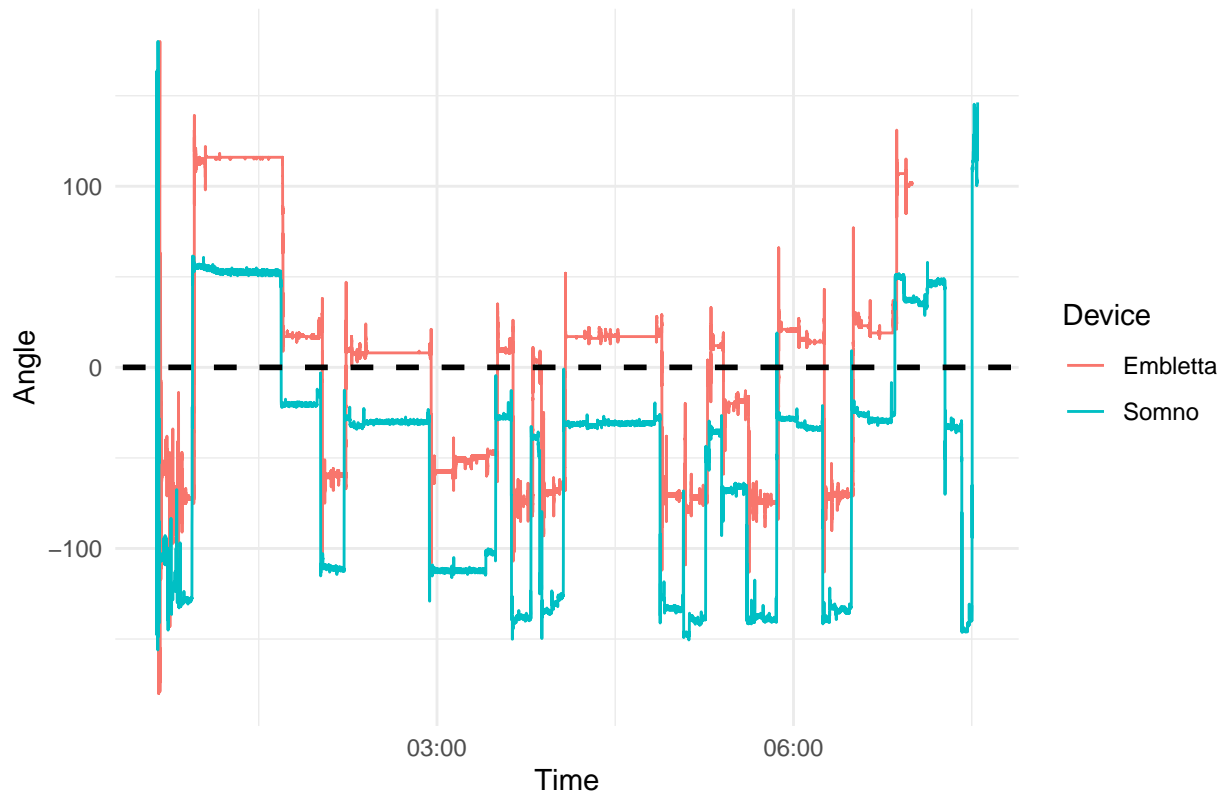


Adjusted Angle Over Time by Device 11/23

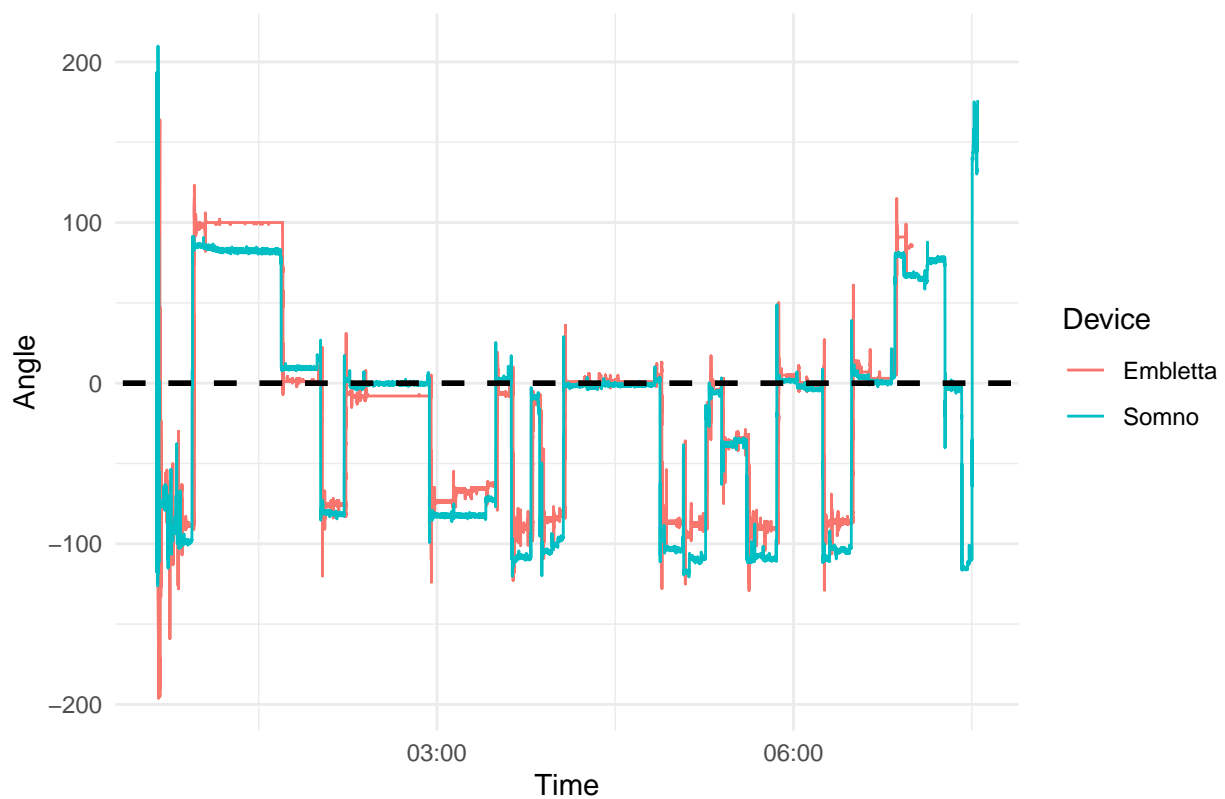


November 24

Angle Over Time by Device 11/24



Adjusted Angle Over Time by Device 11/24



## Conclusion

Based on the analysis of the pilot study data, the SomnoPose data shows a reasonable level of agreement with the Embletta data, particularly in terms of overall trends and changes in sleeping position. However, a more formal study could be used to align/calibrate both devices so that laying on the back is the same 0 degree angle. Additionally, a more formal study would hopefully make start and stop times more standardized with consistent time recording.