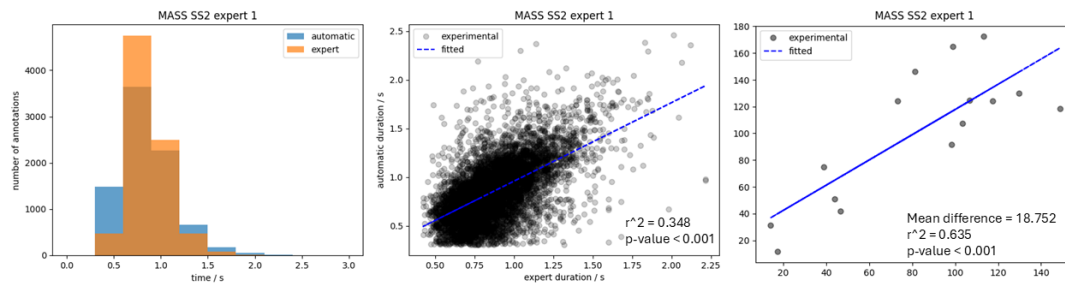
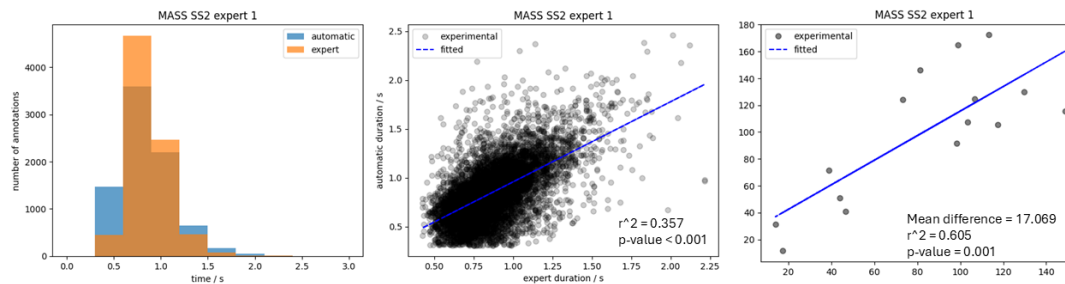


# Supplementary material I, spindle characteristics

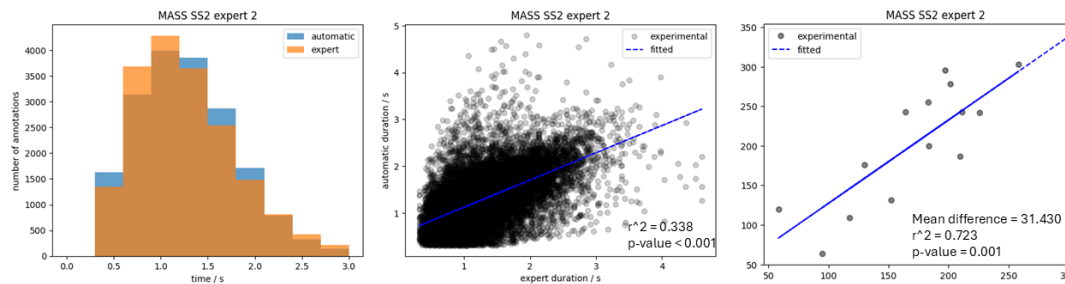
In this document, we expose the spindle characteristics material from the study “Beyond the ground truth, XGBoost model applied to sleep spindle event detection.” This material is left out of the manuscript because of extension and clarity concerns, but we consider it to give important insights into the performance of our methodology.



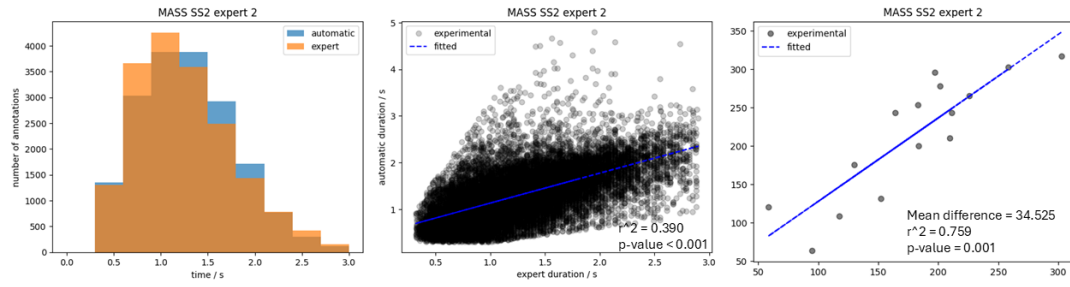
**Figure 1. Spindle characteristics for MASS SS2 expert 1 (IoU > 0.2).** Left panel: histograms of spindle durations. Central panel: correlation of spindle duration for positive pairs. Right panel: subject-wise correlation of spindle densities.



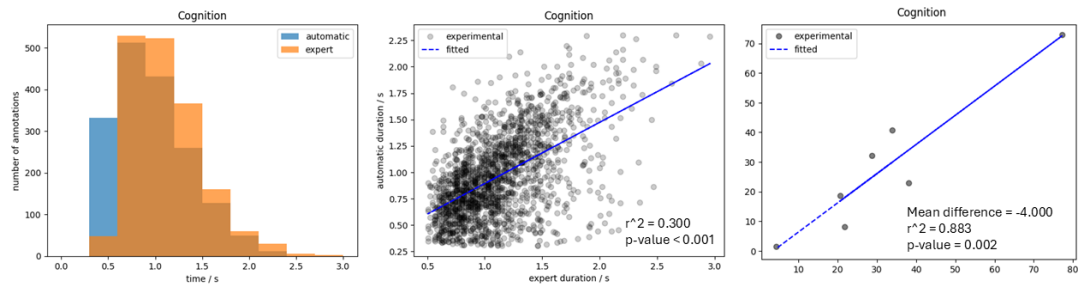
**Figure 2. Spindle characteristics for MASS SS2 expert 1 (IoU > 0.3).** Left panel: histograms of spindle durations. Central panel: correlation of spindle duration for positive pairs. Right panel: subject-wise correlation of spindle densities.



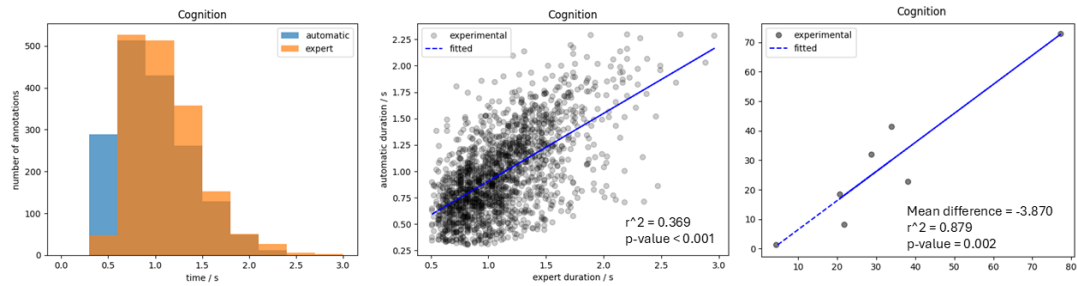
**Figure 3. Spindle characteristics for MASS SS2 expert 2 (IoU > 0.2).** Left panel: histograms of spindle durations. Central panel: correlation of spindle duration for positive pairs. Right panel: subject-wise correlation of spindle densities.



**Figure 4. Spindle characteristics for MASS SS2 expert 2 (IoU > 0.3).** Left panel: histograms of spindle durations. Central panel: correlation of spindle duration for positive pairs. Right panel: subject-wise correlation of spindle densities.



**Figure 5. Spindle characteristics for COGNITION (IoU > 0.2).** Left panel: histograms of spindle durations. Central panel: correlation of spindle duration for positive pairs. Right panel: subject-wise correlation of spindle densities.



**Figure 6. Spindle characteristics for COGNITION (IoU > 0.3).** Left panel: histograms of spindle durations. Central panel: correlation of spindle duration for positive pairs. Right panel: subject-wise correlation of spindle densities.