

ヒト睡眠科学（阿部高志）

Human sleep science (ABE Takashi)



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睡眠と関わるヒトの心理・行動を理解し、制御する

私たちの研究室では、睡眠がヒトの心理・行動とどのように関わっているのかを理解するとともに、その関係を制御することを目指しています。現在は、(1)覚醒時の認知・情動における睡眠の役割、(2)睡眠不足に伴うパフォーマンス低下の理解と防止に関する研究を行っています。工学・情報学系の研究室や企業との共同研究では、(1)睡眠・覚醒と関わる心理・行動の状態推定法、(2)非侵襲的介入による睡眠改善法、(3)睡眠不足に伴うパフォーマンス低下の防止策の開発を行っています。このような技術は、社会的課題の解決に貢献するだけでなく、睡眠と関わる心理・行動の理解を促進するための新しいツールとしても利用できるようになります。

Understanding and control of human mind and behavior related to sleep

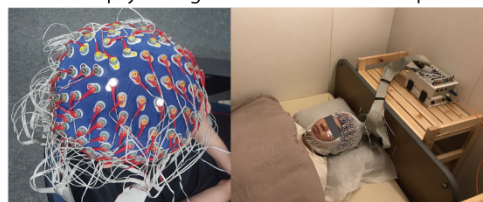
Our laboratory aims to understand how sleep is related to the human mind and behavior, and to control this relationship. Currently, we are conducting research on two main topics: (1) understanding the psychological roles of human sleep, and (2) understanding and mitigating performance deficits from sleep loss. In collaboration with engineering/informatics laboratories and companies, we are developing: (1) methods for estimating the mind and behavior related to sleep and wakefulness; (2) methods for improving sleep by non-invasive intervention; and (3) methods for preventing performance deficits from sleep loss. These technologies will contribute to solving problems in society as well as understanding how sleep relates to the human mind and behavior.

Human sleep laboratory

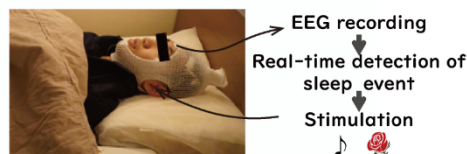


Highly controlled environment for human sleep research

Understanding and facilitating the psychological roles of human sleep

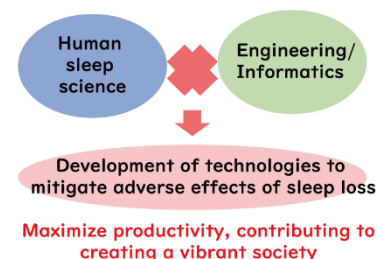


High-density EEG (128ch) allows to accurately estimate the origins of the brain EEG potential during sleep.



Non-invasive closed-loop stimulation to facilitate the roles of human sleep

Mitigating adverse effects of sleep loss



Abe, T., et al. (2020). Tracking intermediate performance of vigilant attention using multiple eye metrics. *Sleep*, 43(3), zsz219

Abe, T., et al. (2014). Sleepiness and Safety: Where Biology Needs Technology. *Sleep and Biological Rhythms*, 12(2), 74–84.