

第22回 BIRD 脳科学セミナー

New Tools to record neural dynamics
in freely behaving animals.

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Current miniature microscope technology for recording of network dynamics in freely behaving animals requires the presence of a wired connection to provide power to the microscope and transmit imaging data to a data acquisition device and computer. We have developed a battery-powered miniaturized microscope which uses a data-logging device to recording the imaging data to a microSD card on the microscope itself. We use these microscopes to record from large populations CA1 hippocampal neurons in animals performing social behaviors or running on a 7.6m track. Recordings with the miniaturized microscope in a model of temporal epilepsy show dramatically reduced stability of place cells firing across days. The wire-free microscope will enable recordings on network dynamics in extremely large or complex environments. We have also developed microscopes that integrate imaging with high channel count electrophysiology recordings as well as microscopes specifically made for non-human primates. These tools will greatly expand the capabilities of miniaturized microscope technology and enable experiments not possible in in the past.

本セミナーは学部生、大学院生の聴講も歓迎しますので積極的に参加してください。

主催: 脳学際研究部門 (Brain Interdisciplinary Research Division)
(東京理科大学における脳研究の学際的な連携基盤の構築を目指し2016年度に発足。
学内の理一・工一・基礎工・理工・薬学部・生命研および学外の研究機関から構成される。)

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