

77th RAP Seminar

The 77th Seminar on RIKEN Center for Advanced Photonics

Language: Japanese

- Hybrid Format -

Date: **June 17(Fri) 16:00 - 17:00, 2022**

On-site: **W319, 3F, Cooperation Center, Wako Campus, RIKEN**
Online : **Zoom**

Title: **Visualization of neuronal activity by multiphoton excitation microscopy and its limitations**

多光子励起顕微鏡による脳神経活動の可視化とその限界

Speaker: **Prof. Riichiro HIRA**

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Pre-registration



Two-photon calcium imaging has enabled simultaneous recording of hundreds of thousands of neuronal activities in the living brain of rodents. This methodological innovation was realized by ultrashort pulsed lasers capable of two-photon excitation and calcium-sensitive dyes (proteins), and has been progressively advanced by optical technologies such as high-speed scanners, larger optical elements, laser multiplexing, adaptive optics and a laser for three-photon excitation. In this seminar, I will outline the limitations of neural activity recording methods that can be achieved with the current state of the art, and introduce the methods being developed by us in particular. We also discuss future techniques that break through the current limitations of multiphoton microscopy as neural activity recording methods.