



# “Functional renormalization group: an introduction and inspiration from machine learning”

by Takeru Yokota (RIKEN)

Time and Date: 10:00-12:00, June 21<sup>th</sup>, 2024

Place: Room 745, Science Complex B H03 (hybrid)

Registration: "[https://us02web.zoom.us/meeting/register/tZcoc-yspj8rEtehkat8\\_1jb6cXBOSZAs5Nw](https://us02web.zoom.us/meeting/register/tZcoc-yspj8rEtehkat8_1jb6cXBOSZAs5Nw)”

The functional renormalization group (FRG), a rigorous formulation of the Wilsonian renormalization group, serves as a powerful tool for non-perturbative analysis in field theory. A key component of this approach is the use of functional differential equations (FDEs), such as the evolution equation for effective action. Solving these equations poses a challenging numerical task, and developing accurate methods is crucial for the success of FRG. In this talk, I will introduce the fundamentals and some applications of FRG. Additionally, I will discuss recent developments in applying machine-learning approaches to FRG.