



# “Probing the origin of heavy elements in the Universe: physics and astrophysics of “kilonova””

by Masaomi Tanaka (Tohoku University)

Time and Date: 13:00-15:00, May 17<sup>th</sup>, 2024

Place: Room 721, Science Complex A-B H03 (hybrid)

Registration: "<https://us02web.zoom.us/meeting/register/tZ0qde-hpzltHN3dXO1SwoQoVYc-V8deT1CB>”

The origin of heavy elements in the Universe is a long-lasting problem in astrophysics. Merger of neutron stars is one of the most promising sites for heavy element nucleosynthesis. By synthesizing heavy elements, neutron star mergers can emit electromagnetic wave signals, so called “kilonova”, which enables us to probe nucleosynthesis by astronomical observations. In fact, a kilonova was observed in 2017 following the detection of a gravitational wave event, which confirms heavy element nucleosynthesis in the neutron star merger. In this seminar, I will introduce various physics involved in neutron star mergers and kilonovae, as well as recent progress in understanding the nucleosynthesis in neutron star mergers.

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