

Seminar Title:
Atomic structure calculations for new physics searches
with isotope shift spectroscopy

Speaker: **Prof. Julian Berengut**
University of New South Wales

日時：2026年9月30日(水) 10:30–12:00

Date and Time: Wednesday, September 30, 2026, 10:30–12:00

場所：理学研究科5号館5階第4講義室525号室

Place: The 4th Lecture room, Room 525 (5F), Physics Department Building

Abstract:

The tiny differences in atomic spectra between isotopes of the same atom are mainly due to changes in the mass and charge distribution of the nuclei. However precision spectroscopy can uncover the effects of higher-order nuclear structure and even test for new physics. For example, atomic experiments can search for a hypothetical “protophobic” light boson (mass < 30 MeV) that would couple neutrons to electrons via a Yukawa potential. In this talk, I will review some of the methods and results of recent studies using this technique. I will also give an overview of the atomic structure calculations required to interpret the experiments.

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