HIROSHIMA UNIVERSITY

広島大学 極限宇宙研究拠点
CORE-U
Core of Research for the Energetic Universe
HIROSHIMA UNIVERSITY

2026年度第6回
広島大学極限宇宙研究拠点セミナー
Hiroshima University CORE-U Seminar

Speaker: **Dr.Yukinao Akamatsu**
赤松　幸尚　氏　（松江高専）

Title: **Alternative Signals for the QCD Critical Point**

Date： **18th . Nov.2026 (Wed.) (15:00-16:30)**
2026年11月18日(水）(15:00-16:30)

Place: **広島大学経済学部B155教室 （ハイブリッド）**
Room B155 , Economy Dept. , Hiroshima University

Language: **Oral in Japanese & the slides are in English**

Abstract: **See the back side of this poster**

Teams Link The 6th Core-U seminar Dr. Yukinao Akamatsu | 会議に参加 | Microsoft Teams

共同セミナーとしての認定は対面のみとします。出欠はセミナー終了時にB155教室で確認します。
Certification for the joint seminar is limited to in-person attendance only.
Attendance will be confirmed at the room B155 after the seminar.
Please bring the seat of the paper for the signature.

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山口頼人、水野恒史、両角卓也
Organizers : Yorito Yamaguchi, Tsunefumi Mizuno ,Takuya Morozumi

Abstract

- **Title: Alternative Signals for the QCD Critical Point**

  Understanding the properties of strongly interacting matter is essential for exploring a wide range of physical phenomena, from the early Universe to neutron stars. However, the QCD phase diagram remains far from fully understood. Theoretical calculations suggest the existence of a QCD critical point, and relativistic heavy-ion collision experiments are being conducted to search for its signatures. So far, experimental searches have primarily focused on fluctuations of conserved quantities. However, available experimental data have not yet provided conclusive evidence for the critical point.
  In this seminar, I will present two studies that aim to identify signatures of the critical point through observables other than fluctuations of conserved quantities. The first study investigates the scaling behavior of the heavy-quark diffusion coefficient arising from the coupling between heavy quarks and critical fluctuations [1]. The second study focuses on the electric charge carried by critical fluctuations and explores the enhancement of photon production and scaling behavior in the photon spectrum [2].
  [1] Akamatsu, Asakawa, Phys. Rev. C109 (2024) L031901
  [2] Akamatsu, Asakawa, Hongo, Stephanov, Yee, Phys. Rev. D113 (2026) 034009