

ELPH seminar**講師 :** **Eric Voutier**

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Laboratoire de Physique des 2 Infinis Irène Joliot-Curie
15 rue Georges Clémenceau
91405 Orsay, France*

日時 : 10月3日 (火) 15:00 – 16:00**場所 :** 電子光理学研究センター三神峯ホール**Physics with Positron Beams at Jefferson Lab**

The perspective of high duty-cycle and high intensity polarized and unpolarized positron beams, in complement to the existing CEBAF (Continuous Electron Beam Accelerator Facility) 12 GeV electron beams, has been nurtured since the very first 6 GeV upgrade of the CEBAF accelerator. Along the years, experimental results about the electromagnetic form factors and the generalized parton distributions of the nucleon pointed towards the importance of positron beams for the experimental determination of these fundamental quantities of the nucleon structure. Further ideas emerged about testing the predictions of the standard model, exploring the dark matter sector, or investigating electroweak processes. A long term and comprehensive research effort has developed both in the physics [1] and the technics [2] areas to assess the potential of an experimental program and to address the technological issues of high duty cycle positron beams. The Jefferson Lab Program Advisory Committee recognized the high scientific value of such a program. The development of positron beam capabilities at Jefferson Lab (JLab) is now identified as the first step of the future CEBAF upgrade.

This seminar will review the current status of the JLab positron physics program and the several technical challenges raised by the development of continuous polarized positron beams.

[1] (JLab Positron Working Group) A. Accardi et al. Eur. Phys. J. A 57 (2021) 261.

[2] (Ce⁺BAF Working Group) J. Grames et al. JACoW IPAC (2023)

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