

## 第71回(2022年度第2回) 極限宇宙研究拠点セミナー (the 2<sup>nd</sup> Core-U Seminar in 2022)

日時 : 2022年04月25日(月) 13:00~14:20

形式 : zoom配信

講師 : 野村 真理子氏 (呉工業専門学校)

題目 : Radiation hydrodynamics simulations of AGN winds:  
comparison with observations and impact on SMBH growth  
概要 :

In AGNs, outflows powered by the accretion flows are ubiquitous. Especially, ultrafast outflows (UFOs) identified via blueshifted absorption lines in the X-ray band show the large mass-loss rate and kinetic power, possibly affecting growth of the central SMBHs. However, the acceleration mechanism of UFOs and the details of the impact on SMBH growth are still unknown. In our work, we focus on the line-driven disk wind, which is accelerated by ultraviolet radiation through line transitions of metals, as an obvious candidate for UFOs. I will present our results of radiation hydrodynamics simulations line-driven winds and synthetic X-ray spectra based on the simulations. We found the X-ray observations of UFOs can be well reproduced by the line-driven winds. I will also discuss the effect on SMBH growth by estimating the mass-loss rate of the simulated winds. Our results suggest that the line-driven winds effectively slow down the growth of BHs for the BH mass larger than  $10^5$  solar masses in high-metallicity environments.

**Zoom link :**

<https://zoom.us/j/333177847?pwd=L1hrOWImMUZxTmYyNWNEVmtRWjBodz09>

本セミナーは共同セミナー（理工学融合共同演習）の対象です。先進理工系科学研究科の他プログラム専門科目、共同セミナー等の認定を受ける人は4月18日(月)-22日(金)の間に水野（mizuno@astro.hiroshima-u.ac.jp）あてに氏名および学生番号をメールで連絡して下さい

\*出席確認は、講演終了時、質疑応答前に行う

\*司会のアナウンスに応じZoomチャット機能で水野に学籍番号と名前を送る

\*セミナー終了後1週間以内(05/02月曜一杯)に水野（居室：理学部B203）にサインをもらいに行くこと。

広島大学極限宇宙研究拠点 (Core-U) セミナー世話人 両角卓也, 水野恒史, 山口頼人

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