

第 74 回 RESCEU コロキウム



東京大学大学院理学系研究科 附属ビッグバン宇宙国際研究センター

日 時: 2026 年 1 月 30 日(金) 14:00 ~ 15:30

場 所: 理学部 4 号館 1 階ピロティ RESCEU セミナー室

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Time-Delay Cosmography with JWST NIRCam: Modeling Quadruply-Imaged Quasars

Abstract

The discrepancy between early- and late-universe measurements of the Hubble constant (H_0), also known as the “Hubble tension”, has only grown over time despite increasing precision across the different probes. As a result, there is a great need for independent confirmations of this tension. One independent method is time-delay cosmography, offering a one-step, distance ladder-independent route to H_0 . In this talk, we will explore how much JWST imaging can tighten these measurements: our first JWST lens models of system WFI2033 improved modeling precision by 22% and, under fixed external inputs, shifted the system’s inferred H_0 upward by $\sim 3\%$. We now extend our sample to HE0435 and PG1115, two quadruply-imaged quasars previously modeled with HST, and use the STARRED PSF modeling technique to model both system’s JWST NIRCam/F115W imaging. We will report the change in precision on H_0 , adopting new single-aperture stellar kinematics from JWST/NIRSpec and previously published time delays. Finally, we will close by situating these results in the current TDCOSMO landscape and outlining how 10 forthcoming JWST targets will further tighten uncertainties and drive toward percent-level precision on H_0 .

興味をお持ちの方の聴講を歓迎致します。