



**Yehui Hou**

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**Title: Near-Horizon Polarization: Unveiling the Black Hole Spin from Polarized**

**Time:** 10:30-11:00, 20 February (Thursday), Shanghai time

**Host:** Dong Lai

**Location:** Online

**Join Tencent Meeting:**

<https://meeting.tencent.com/dm/emOz1VvVaufB>

**Meeting ID:** 561900233 (no password)

## Abstract:

The polarized images of supermassive black holes captured by the Event Horizon Telescope (EHT) offer a promising way to probe spacetime geometry. However, uncertainties in accretion states complicate this analysis. We notice that the extreme frame-dragging near a rotating black hole could lead to a degeneracy in plasma flow configurations, causing the polarization patterns to converge. Through rigorous calculations, we identify "near-horizon polarization", a unique observable that encodes spacetime geometry (Kerr spin) while remaining insensitive to accretion uncertainties. This suggests it could serve as a potential black hole spin indicator.

## Biography:

Yehui Hou(侯业辉) is a PhD candidate at the School of Physics, Peking University, under the supervision of Prof. Bin Chen. His research interests include using black hole images to test the nature of gravitation, exploring horizon-scale accretions and jets, and particle dynamics in curved spacetimes.