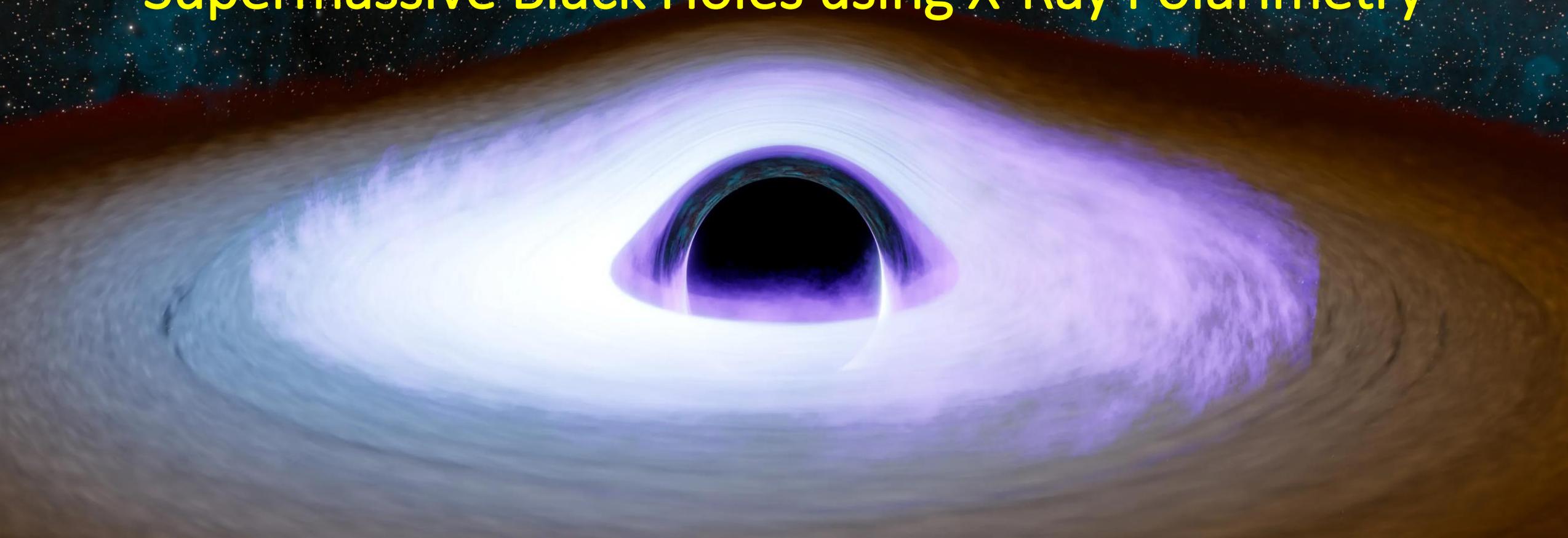


Comparing the Accretion Geometries of Stellar and Supermassive Black Holes using X-Ray Polarimetry



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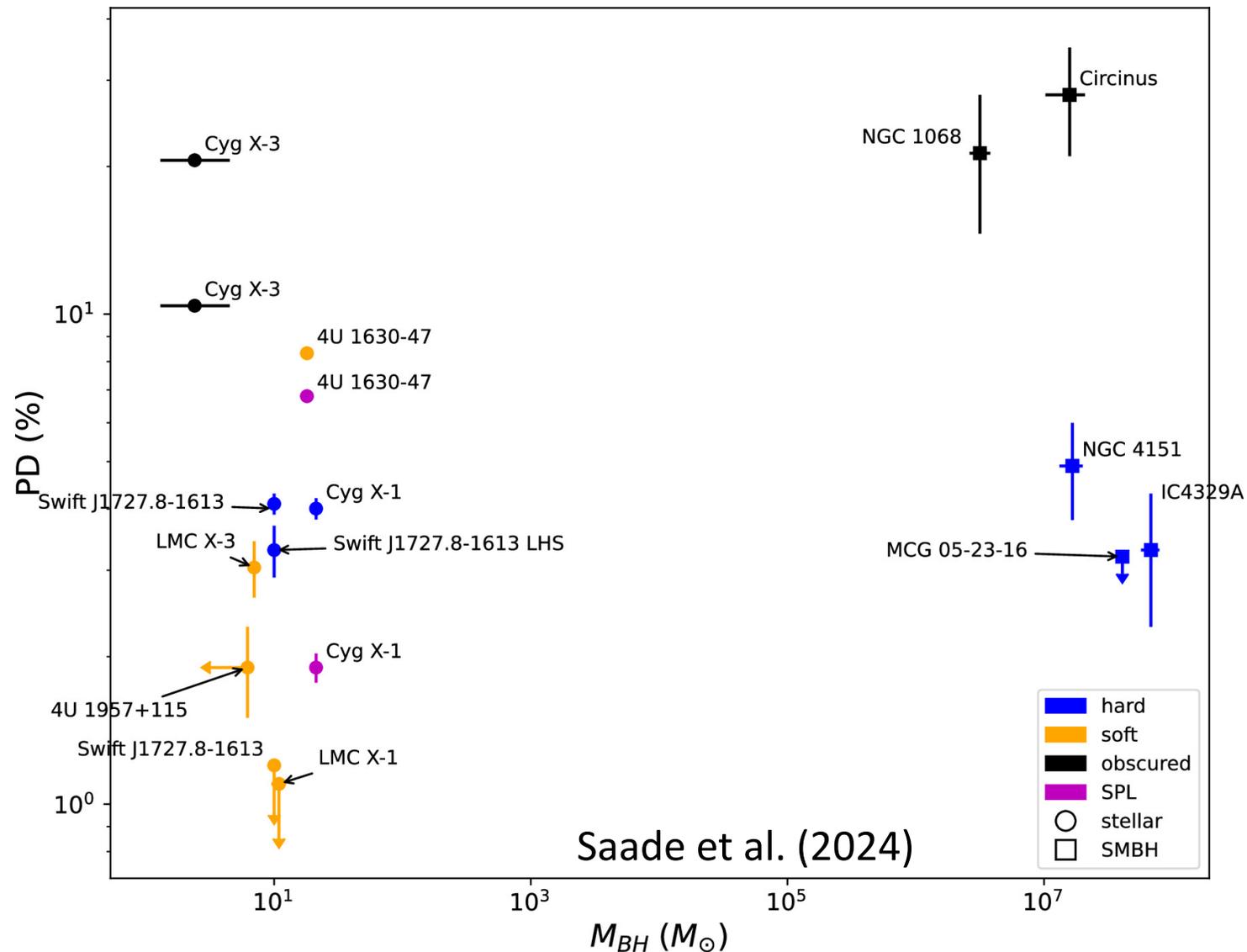
IXPE results on accreting black holes

- X-ray polarization provides unique information on the geometry of accreting sources.
- Saade et al. (2024) examined all IXPE measurements of accreting BH to date.

Includes systems:

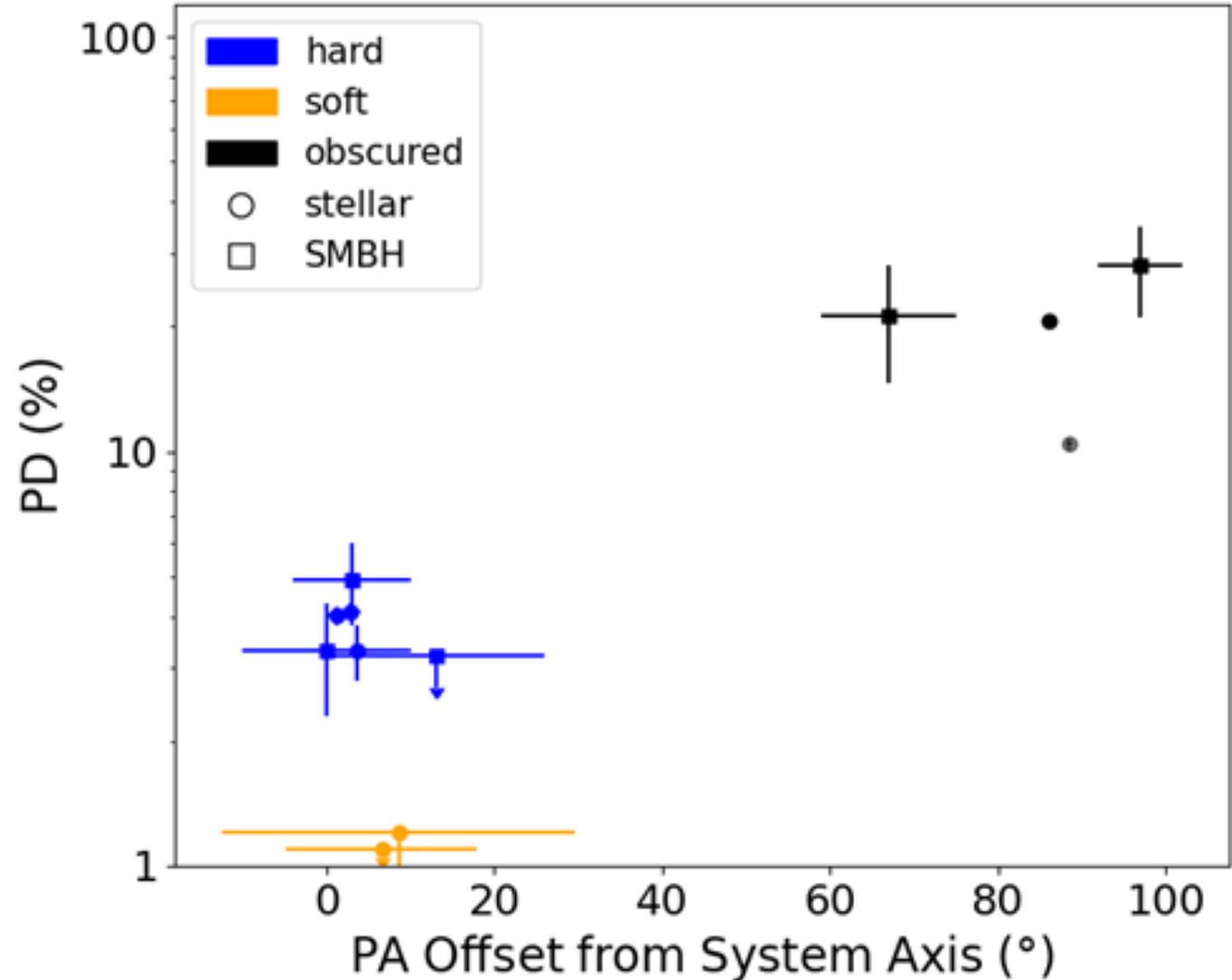
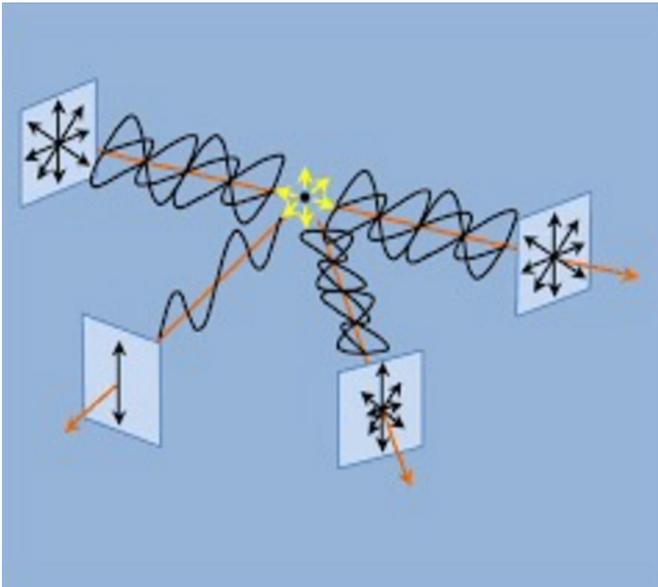
- View of inner disk blocked (obscured)
- X-rays dominated by corona (hard state)
- X-rays dominated by disk (soft state)

➤ No strong dependence on BH mass.



X-ray polarization of accreting black holes

- Measured offset of polarization angle (PA) from symmetry axis.
- Polarization degree (PD) is large (10s of %) when offset is near 90° .
- PD is moderate (few %) for hard state systems and offset $\approx 0^\circ$ implies corona is extended along disk.



Conclusions

- X-ray polarimetry results support the idea that stellar and supermassive black holes share a common coronal geometry.
- Alignment of polarization angle with symmetry axis in hard state systems implies corona is extended along disk.
- Large polarizations for obscured systems support the AGN unification hypothesis.

