



Contribution ID: 286

Type: **Plenary Talk**

## **Supermassive Black Holes at the Centers of Galaxies**

*Tuesday, December 12, 2023 8:40 AM (50 minutes)*

The orbit of the S2 star and event horizon scale imaging have provided the strongest evidence yet that supermassive black holes (SMBHs) exist at the Galactic Center and in M87. Neither technique, however, can be easily applied beyond these two galaxies. Instead, direct evidence for other SMBHs in the nearby Universe has relied on measurements and modeling of spatially resolved kinematics of integrated stellar light or rotating disks of gas close to the hole. I will review both the observational and theoretical challenges in this endeavor, and discuss some recent progress enabled by sensitive integral-field spectrographs on large telescopes and by new approaches in dynamical modeling of galaxies using the Schwarzschild orbit method.

**Primary author:** MA, Chung-Pei (UC Berkeley)

**Presenter:** MA, Chung-Pei (UC Berkeley)

**Session Classification:** Plenary Talk