



Dr. Yubo Su  
Princeton University



## Resonant Spin Dynamics of Close-In Exoplanets: Avoiding Tidal Locking

**Time:** 15:00-15:45, 16 July (Tuesday), Shanghai time

**Venue:** N600 (TDLI)

**Host:** Dong Lai (赖东)

**Join Tencent Meeting:** <https://meeting.tencent.com/dm/8FzoKrrtPyr>

**Meeting ID:** 760551216

### Abstract:

The recent launch of the James Webb Space Telescope has helped make the first direct measurements of exoplanet atmospheres. While the interpretation of these data remains an area of active research, data analysis pipelines tend to assume that these close-in planets are tidally locked to their host stars. This is a natural assumption, as the dissipation of the tide raised on the planet by the star typically results in tidal locking in just millions of years or less, much shorter than the typical billion-year ages of these planets. However, in planetary systems consisting of more than one planet, spin-orbit resonances can keep the planet away from tidal locking even in spite of the effective dissipation. In this talk, I will introduce these resonances and discuss their implications for the tidal locking assumption.

### Biography:

Yubo Su is currently a Lyman Spitzer Jr Postdoctoral Fellow at Princeton University. Previously, he obtained his PhD under the supervision of Professor Dong Lai at Cornell University in 2022. He has a broad range of research interests under the general umbrella of spin dynamics, including black hole binary formation, tidal evolution, and spin-orbit coupling in planets and stars.