Xudong
Sun
University of Hawaii
Oral
(Keynote Speaker)
Despite the frequent detection of stellar super flares, reports on stellar coronal mass ejections (CMEs) are rare. This is in contrast with the Sun, where almost all large flares are accompanied by a CME. In this talk, I will review observational constraints on this "missing stellar CME conundrum". I will describe our effort at applying lessons from the Sun to more active late-type stars. We argue that the torus instability, a leading mechanism for solar CME, tends to be suppressed in stellar magnetic environment. Contributing factors include larger spots, stronger global dipole field, and more closed magnetic topology compared to the Sun. Their confining effect will induce "failed eruptions" with flare emission but no plasmatic ejecta. The space weather condition around active late-type stars is thus expected to be quite different from that of the Earth.
Presentation file
4-thursday-sun-xudong.pdf
YouTube link
View recording
Meeting homepage
4th Eddy Cross-Disciplinary Symposium
Download to PDF