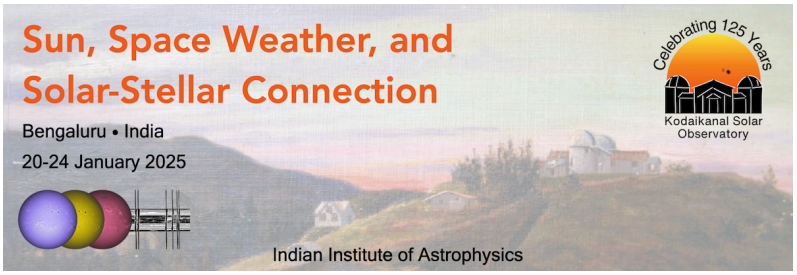

Contribution ID: **16** Type: **Invited review talk**

Origin and Energization of Solar Eruption Events

Wednesday, January 22, 2025 11:15 AM (25 minutes)

Coronal mass ejections (CMEs) and flares are the most energetic explosive phenomena occurring in the solar atmosphere and subsequently propagating into the interplanetary space, probably affecting the safety of human high-tech activities in the outer space. To understand and predict the transient events, we need to elucidate some fundamental but still puzzled questions, one of which concerns their origin and energization. My talk, on the one hand, will address the new discovery of pre-eruptive configurations causing solar eruptions and deliver a new understanding of how the pre-eruptive configurations evolve from the slow-rise precursor to the violent eruption. The second part of my talk will focus on observations and simulations of magnetic reconnection within the current sheet between the erupting CME and flare loops with a preference on its turbulent nature, aiming to understand the basic energy release pattern of flare reconnection and disclose the physical origins of various flare fine structures.

Contribution Type

Theme

Energetic Phenomena

Primary author: CHENG, Xin (Nanjing University)

Presenter: CHENG, Xin (Nanjing University)

Session Classification: Flares and CMEs