

# **Solar-planetary Environment and its Habitability: Insights from Atmospheric Escape Studies**

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## **Abstract:**

Solar-planetary environment, which includes the system from the interplanetary space to planetary surface, depends on various conditions such as the distance from the Sun, solar activities, planetary size, atmospheric composition, and intrinsic magnetic field. Variations of the solar-planetary environment facilitate various atmospheric escape processes as well as space weather phenomena represented by aurorae. The atmosphere retention is one of necessary conditions for habitable terrestrial exoplanets. In this interdisciplinary lecture, we will explore current understanding of solar-planetary environment with a focus on studies of atmospheric escape processes and their connection to the planetary habitability.