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Jiaxing · China

PING ZHU

Executive director of Space Science Center of the Institute for Advanced Study, Shenzhen University



Lecture: Moon-bases Earth's Radiation Budget Observation System

Prof. Dr. Ping Zhu is the Executive Director of the Space Science Center at the Institute for Advanced Study, Shenzhen University. His research is primarily focused on the development of advanced instrumentation and the interpretation of data for deep space missions. Over the course of his career, he has contributed to numerous projects involving low Earth orbit (LEO) satellites and deep space pathfinder experiments.

Currently, Prof. Zhu's team is engaged in several cutting-edge initiatives aimed at improving our understanding of space and planetary environments. These include the development of instrumentation for measuring Earth's radiation budget, broadband detection of lunar radiation, and high-precision observations of the solar limb profile in the near-infrared spectrum. Each of these projects plays a vital role in expanding the scope and precision of space-based measurements.

The Space Science Center houses a state-of-the-art laboratory designed specifically for space environment simulations. Among its key assets is a thermal-vacuum chamber capable of reaching cryogenic temperatures as low as 100K. The lab is also equipped with a solar simulator and thermal radiation sources that replicate the surface conditions of Earth and Mars. In addition, a deep space low-temperature blackbody simulator has been integrated into the thermal-vacuum system, allowing researchers to recreate highly specific environmental conditions for testing.

These comprehensive facilities provide the capability to rigorously evaluate and qualify optical instruments for space missions, ensuring they perform reliably under extreme conditions. Under Prof. Zhu's leadership, the Space Science Center continues to contribute significant technological advancements and scientific insights to the global space research community.