Lunar Exploration Program of China: Practice and Prospect

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Abstract

In the ever-evolving aerospace domain, aerospace visual navigation technology is pioneering a new era of autonomous operation and space exploration with its distinct advantages. In this presentation, we will discuss three main research topics of our group, namely aircraft visual navigation and localization, spacecraft pose estimation, and visual guidance for landing. Recent advancements and potential applications in the field will be comprehensively introduced.

Dengyun Yu is currently Deputy Director of the Science and Technology Committee of China Aerospace Science and Technology Corporation, Chief Designer of China's Lunar Exploration Program Phase IV, Academician of the Chinese Academy of Sciences, Academician of the International Academy of Astronautics, and Chair of the Satellite Commercialization Applications Committee of the International Astronautical Federation. He has long been engaged in research and application of spaceflight systems engineering, dynamics, and control technologies, making significant contributions to major national aerospace missions such as China's lunar exploration program, manned space program, and high-resolution satellite projects.

He has received two National Science and Technology Progress Award special awards, one first prize and one third prize, two provincial and ministerial-level first prizes for scientific and technological progress, and one second prize for defense technology invention. He has authored six books, obtained 27 authorized invention patents, and published over 100 academic papers. In June 2020, he was awarded "World Space Award" the highest honor presented annually by the International Astronautical Federation. In 2023, he received "Qian Xuesen Outstanding Contribution Award" from the China Aerospace Foundation.