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The Modern Day Space Elevator as a Permanent Transportation Infrastructure (3)

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KEYNOTE: JEROME PEARSON MEMORIAL LECTURE - LESSONS LEARNED FROM SPACE ELEVATOR RESEARCH AND DEVELOPMENT AND FUTURE CHALLENGES

Abstract

More than 10 years have passed since Obayashi Corporation announced its space elevator construction concept in 2012. In the meantime, following a long-term roadmap for technological development, we have conducted many research projects on key technologies, including collaborative research with other industries and academia. These included examination of cable materials and space experiments of candidate materials, cable dynamics, climber design and small-scale modeling, examination of energy supply, and interaction with atmospheric electricity. Understanding of the various elements of space elevators has deepened, and now space elevator technology development has entered the next phase toward practical application. As technological development becomes more detailed in the future, design content will need to be updated successively. Realistic responses will be required in technical considerations and social science aspects, such as marketing, business promotion, and legal frameworks. Now, we are facing the perfect opportunity to foster momentum further and promote efforts worldwide toward the innovative utilization of space elevators.