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Modern Day Space Elevator Transformational Strengths and their Applications (3)

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DESIGN CONSIDERATIONS FOR A SPACE MANUFACTURING FACILITY AT THE APEX  
ANCHOR

**Abstract**

A materials processing facility at the Apex Anchor presents a groundbreaking opportunity for space-based manufacturing. The facility would leverage lunar mining operations to retrieve and extract raw materials from the Moon. Space-based solar power ensures continuous and sustainable operation. Challenges include lunar transportation logistics and mitigating risk associated with the potential Apex Anchor instability, which could affect facility operations. The paper will study challenges at the Apex Anchor, including (1) stability systems, (2) radiation mitigation strategies, (3) the collection of solar energy for power, and (4) the requirements for a transportation node.