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SPACE POWER SYMPOSIUM (C3)
Space-Based Solar Power Architectures – New Governmental and Commercial Concepts and Ventures (1)

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AN INTEGRATED ROADMAP FOR SPS-ALPHA (SOLAR POWER SATELLITE VIA ARBITRARILY LARGE PHASED ARRAY)

Abstract

There is a continuing need for new, sustainable energy options to support future global economic development without harming Earth's climate. In 2011, an novel approach to the challenge of the solar power satellite was proposed: SPS-ALPHA (solar power satellite by means of arbitrarily large phased array). In order to be realized, it is critical that ambitious future space mission concepts such as SPS-ALPHA must be realizable programmatically. This paper describes an integrated roadmap forward for space solar power in the framework of the SPS-ALPHA concept, based on the step-by-0step implementation of technology developments and demonstrations and nearer-term space mission applications for the resulting evolving systems. This "apply as you go" approach allows for both sustainable political support and interim market-based private sector investments in the development of space solar power.