

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)  
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VACUUM MAGLEV - A GREENER AND SUSTAINABLE SPACE TRANSPORT SYSTEM THAT  
COULD KICK-START FURTHER INTERNATIONAL COLLABORATION.

**Abstract**

This paper proposes a propulsion system that combines the use of off-the-shelf magnetic levitation and propulsion technology with that of vacuum tubes to provide initial acceleration to a horizontal launch vehicle. Whilst highlighting the importance of this technique, the viability of the technology and the potential for this system to be developed in the near future, we also consider the design and development challenges that would be faced along the way.

The paper goes on to discuss the fundamental elements that would enable the development of such a system and how the proposed system along with a custom design for launch vehicle would not only be better than current propulsion mechanisms, but ensure a greener and sustainable future for space and space based applications.

By envisioning the proposed system as a global endeavor, the final sections discuss the importance of new and improved international partnerships in the space domain, allowing groups of nations to develop a commercially viable and financially sustainable space transportation system that meets our future needs.