

IAF SPACE PROPULSION SYMPOSIUM (C4)  
New Missions Enabled by New Propulsion Technology and Systems (6)

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FAST TRANSIT TO MARS

**Abstract**

A key requirement to support and maintain a human settlement on Mars is a transportation system employing a variety of propulsion technologies to deliver a diversity of payloads where speed, reliability, cost and mass are key delineators. In this work, participants from the International Space University's Space Studies Program (SSP19), will present on the feasibility of advanced rapid propulsion technologies and their disruptive impact. Specifically we will consider propulsion technologies beyond chemical, offering transits from Earth to Mars on the order of days-weeks rather than months. We will address the technical feasibility and requirements of such fast-transit technologies, the likely RD investments required and the overall impact that these technologies could have on supporting settlements on Mars and accelerating Solar System exploration.