

Abstract Submitted
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Relativistic Tsiolkovsky equation – a case study in special relativity JEREMY REDD, ALEXANDER PANIN, Utah Valley University — A possibility of using antimatter in future space propulsion systems is seriously discussed in scientific literature. Annihilation of matter and antimatter is not only the energy source of ultimate density 9×10^{16} J/kg (provided that antimatter fuel is available on board or can be collected along the journey) but also potentially allows to reach ultimate exhaust speed – speed of light c . Using relativistic rocket equation we discuss the feasibility of achieving relativistic velocities with annihilation powered photon engine, as well as the advantages and disadvantages of interstellar travel with relativistic and ultrarelativistic velocities.

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