

EFFECT OF DOUBLE IMPULSE TRAJECTORY TRANSFER FROM EARTH TO MARS MISSION

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Abstract

The interplanetary mission from Earth to Mars takes at minimum energy launch opportunity with a single impulse transfer. Due to some unavoidable circumstances, if the launch takes at a later date, other than the minimum energy launch opportunity then the energy requirement increases. Also if the terminal states, approach the condition of opposition, the energy requirements rapidly increase and become infeasible too, resulting in restrictions on the launch window. This is due to the relative inclinations of the two planets. To overcome this situation, the possibility of applying an intermediary impulse between the two terminals, named as double or two impulse transfers is considered. This paper gives the necessary details for the double impulse transfer and draw attention to its advantages.

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