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Satellite Maneuvers Using the Hénon's Orbit Transfer Problem: Application to Geostationary Satellites

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Abstract: The main objective of the present paper is to study minimum fuel maneuvers to change the position of a spacecraft in orbit around the Earth. The control used is a bi-impulsive maneuver, where the first impulse is applied in the initial position of the satellite to send it to a transfer orbit that will cross the desired final position of the spacecraft. Both initial and final position of the satellite belongs to the same Keplerian orbit. The goal is to find the transfer that has the minimum total increment in velocity and that performs the desired maneuver.

Keywords: *Astrodynamics; orbital maneuvers; bi-impulsive control.*

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