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COMPARATIVE ASSESSMENT OF PATCHED CONIC MISSION TO TITAN VIS-A-VIS CASSINI
MISSION

Abstract

Saturn's largest moon, Titan, is known to be the only natural satellite orbiting around a solar system planet which is known for its dense atmosphere. Its atmospheric composition is due to the presence of liquid bodies of hydrocarbons such as propane and methane, thus making it uniquely interesting. It also resembles great similarities to the Earth as research has shown that 40% of Titan mass is water, thus resulting in it being chosen for the future exploratory space mission. Research presented focuses on 2-way mission design, Earth-Saturn-Titan using patched-conic approximations and Hohmann transfers, and eventually qualitative comparison to Cassini-Huygens mission.