

# **Relativistic Effects On Sun-Synchronous Orbits Including The Influence Of Direct Solar Radiation Pressure**

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A Sun-Synchronism for a moving near earth's satellite results when the initial semi-major, eccentricity, and inclination are selected such that ascending nodal precession is easterly with secular rate  $0.986^{\circ}$ /day (the mean orbital rate of the apparent Sun). Second order (relative to Sun, Earth, and Moon oblateness) North-South gravitational forces cause slow changes in the inclination and ascending node of a sun-Synchronous orbit. These forces can disrupt the Sun-Synchronism. In this paper we analyze the perturbations due to the solar radiation pressure with the relativistic effects as a disturbing forces on the Sun-Synchronous orbits.