

SERIES ON

Geometry, Integrability and Quantization

ISSN 1314-3247

## ON THE DYNAMICS OF THE SOLAR SYSTEM II: EVOLUTION OF THE ORBITAL PLANES OF THE PLANETS

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Communicated by Charles-Michel Marle

The evolution of the orientations of the orbital planes of the planets is calculated under the approximation of circular orbits. The inclination and the longitude of the ascending node of each orbital plane are then described by means of a linear combination of complex exponentials of time with periods of several thousand years. The evolution of these orbital elements for Mercury, Jupiter and Saturn is displayed as well as that of the ecliptic. Finally, the obliquity of the ecliptic is computed from  $-2\,000\,000$  to  $+2\,000\,000$  years since J2000. It ranges from  $10^{\circ}$  to  $35^{\circ}$  in this time interval.

MSC: 70F10, 70F15

*Keywords*: nodal precession, obliquity of the ecliptic, orbital inclination, orbital planes, precession of the ecliptic, precession of the equator, solar system

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