New Constants for Sampson-Lieske Theory of the Gelilean Satellites of Jupiter II

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Abstract

New constants for Sampson-Lieske theory of the Galilean Satellites have been derived using 6360 individual photographic positions (1891-1990) and 438 pseudo astrometric positions from mutual occultations during 1973, 1979, 1985 and 1991. Using these new sets of constants, although no significant improvement is noticed in the O-C values of the sky plane co-ordinates compared to G5 and E 2 $\times$ 3, residuals in longitude for Io and Euyropa are found to improve. Problems concerning the inclusion of mutual event data in attempting evaluation of secular variations of the mean motions of the satellites are discussed.

Keywords : Galilean Satellites - Mutual occultations - ephemerides - Jupiter