A DETERMINATION OF THE PRINCIPAL TERM OF NUTATION

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The method for deriving the amplitudes of the principal term of nutation from the z-term of latitude and the corresponding term of UT (here denoted by w) is well known (Yokoyama, 1977).

The data of the BIH reductions for the polar motion and UT1 are especially well suited for implementation of this method. As corrections are made in order to refer the data of each observatory to a fixed system of star positions, the amplitudes are not lessened by the successive improvements of group corrections.

A reduction of the 1962-1974 data has already been published (Feissel and Guinot, 1976).

A new reduction was performed on the 1962.00-1976.95 data with some improvements concerning the possible systematic errors: the unknowns due to erroneous proper motions were added, and the times of the observations and their duration were more precisely modeled. The results of this new discussion are given below.

	N sin ε	Ω
IAU values (1970)	6".8607	9".2106
BIH corr. (1962-1976) from z	-0".0149±0".0039	0".0007±0".0022
BIH corr. (1962-1976) from w	-0".0211±0".0106	-0".0030±0".0059
BIH corr. from z and w	-0".0155±0".0034	+0".0004±0".0018
BIH values (1962-1976)	6".8452±0".0034	9".2110±0".0018

E. P. Fedorov, M. L. Smith and P. L. Bender (eds.), Nutation and the Earth's Rotation, 109–110.

As only 15 years of data are available, the correlation is rather strong between the nutation terms and the variations due to proper motions, especially for the nutation in longitude. The uncertainties will rapidly decrease during the next few years.

References

Feissel, M. and Guinot, B.: 1976, Mitt. Lohrmann Obs. Tech. Univers. Dresden 33, 949.
Yokoyama, K.: 1977, Proceedings of IAU Symposium No. 78.