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JOINT DISCUSSION 2 ABSTRACTS

Update to SOFA Report: Patrick Wallace, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon OX11 0QX, UK

Abstract. Since the Colloquium 180 paper was presented, the draft SOFA Software Collection has been prepared for Board inspection, and procedures have been put in place for the Board's views to be registered. At the time of writing, votes from three Board members have been received, approving release of the routines; Catherine Hohenkerk (HMNAO) is carrying out detailed testing of the draft collection, comparing the results with software used in the production of the almanacs.

The Capitaine *et al.* precession-nutation algorithm has been coded to SOFA standards and its output has been compared with results provided by the Observatoire de Paris. Supporting routines have been drafted which compute stellar angle from UT and decompose the precession- nutation matrix into classical forms. When the final IAU 2000A and 2000B precession-nutation models are announced, SOFA implementations will be added to the draft SOFA Software Collection.

Numerical simulation of reductions of microarcsecond relativistic effects in space astrometry: Kopeikin, S.M. (Missouri-Columbia University, USA); Yagudina, E.I, Vasilyev, M.V., Shuygina, N.V. (Institute of Applied Astronomy RAS, Russia); Yagudin, L.I. (Pulkovo, Russia)

Abstract. The accuracy of the astrometric observations using space optical interferometers is expected to be of the order of 1 microarcsecond. The processing of such precise measurements demands the using of a rigorous relativistic model (for example, Klioner, S.A., Kopejkin, S.M., Astron. J., 1992, 104, 897). Special software is developed for taking into account all effects of one microarcsecond level caused by post-Newtonian and post-post-Newtonian monopole perturbations. Observations received by space optical interferometers located on an artificial satellite are simulated. The satellite orbit parameters and telescope characteristics were chosen rather close to that of Hipparcos mission. The data analysis has been performed to improve coordinates of small amount of stars. The applied relativistic model did not show the valuable enlargement of the accuracy of the adjusted stellar parameters. Evidently this result arises from the strong correlations between parameters of stars and small value of addition relativistic effects. The implementation of the "real life" observational program has to improve the accuracy of the stars position determination (of the order of 10 μas). In the final solution it is assumed to use the Guide Star Catalogue as an input one.