

CELESTIAL COORDINATE SYSTEM AND THE FK5 CATALOGUE

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To study the motion of the celestial objects in a reference frame one should know the evolution of the frame itself. In our case it the motion of the origin of coordinates and the proper motions of the objects, the system is based upon.

It is evident, that the inertial coordinate system has just limited field of applications. In many cases the condition of the inertiality is either redundant either insufficient.

The system with well-known motion sufficient for many practical problems.

In 1980th the author of this paper had noticed that the traditional methodologies of the construction of the fundamental catalogues put the limit to its precision: the systematical errors on northern hemisphere of the series of fundamental catalogues oscillates, but does not show any further decrease. This general suggestion is being illustrated by us with the comparison of the "FK5 - FK4" (1986.5) and "FK4 - FK3" (1963.5) systematic differences. It seems, that the comparison does confirm our idea. Therefore it is necessary to apply the new method of approach to the construction of the future Fundamental System. In other words it needs "perestroyka".

DISCUSSION

Schwar: I agree with what Dr Gulyaev has said in many respects in particular that the systems of FK3, FK4, FK5 are rather similar. But I doubt that the catalogues of the 19th century are valuable for improving the system because of the large systematic errors in those catalogues. It is therefore important to continue ground-based absolute observations with modern or new devised instruments, at least until space astrometry has proved to provide an improved system.

Gulyaev: It is necessary to add: "absolute observations at high-altitude observatories".

Vityazev: Can you formulate the principal features of your "new thinking" policy in "perestroyka" of the FK compiling procedure?

Gulyaev: The main thing is the use of wide range of observational results including optical ground-based observations (with meri-

dian instruments, astrographs, astrolabes), space observations (Hipparcos, Lomonosov, HST), VLBI, as well as observations in IR, UV, X-ray, gamma-ray. The future Fundamental System must present "Grand Unification" of the all-waves systems which will be obtained by various technics.

