PHYSICAL DATA OF THE FUNDAMENTAL STARS

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ABSTRACT. The precise positions and proper motions (J2000.0) of 1535 Basic FK5 stars in the FK5 system have been used in the reduction of the local vertical monitoring and the catalog observations at Beijing Astronomical Observatory.   In addition, similar data for 1987 FK4 Sup stars, in which 980 stars indicated by "F" will be included in the FK5, were made available recently by Heidelberg via Prof. Tong Fu, director of Purple Mountain Observatory. The positions and proper motions of the other 1007 FK4 Sup stars in the FK5 system are provided by the Astronomisches Rechen-Institut with relatively low accuracies. However, the physical data, such as the visual magnitudes and the spectral types of these rs with rather large uncertainties have their origin in the Henry Draper Catalogue since the compilation of the FK4 and the FK4 Sup. More accurate visual magnitudes available in the well-defined photoelectric system and the spectrum types in the MK-system may be found, for example in the Bright Star Catalogue and its supplement.

For the convenience of users of astrometric observations and for geodetic purposes, visual magnitudes (V), color indices (V–B), spectral types (Sp), tritonometric parallaxes (p in mas), and radial velocities (RV in km/sec) for the 1535 FK4 stars and 1987 FK4 Sup stars are available.

These data are available from the authors in machine-readable form which includes the mean positions and proper motions of J2000.0 in the FK5 system and the cross-references to the GC of FK4 stars and FK4 Sup stars. Printed or magnetic versions of the data may be requested from the authors.

REALIZATION OF THE LOCAL INERTIAL GEOCENTRIC FRAME IN RELATIVITY

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ABSTRACT. There are two kinds of geocentric frames: local inertial and non-inertial geocentric frames. Ashby et al successfully constructed a local inertial geocentric frame in the neighborhood of the gravitating Earth. In the frame with origin at the Earth's center, the gravitational effects of the sun and of planets other than the Earth are basically reduced to their tidal forces, with very small relativistic corrections.

However, the spatial base vectors of the local inertial frame essentially experience the geodesic (or deSitter) precession with respect to the solar system barycentric frame. Hence the realization of the local inertial frame requires that the general precession should exclude the geodesic precession. This requirement is inconsistent with the convention that the amount of geodesic precession is included in that of the general precession given by Lieske *et al.*