ON ASTROMETRIC APPLICATIONS OF THE VERY LONG BASELINE AMPLITUDE INTERFEROMETER*

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ABSTRACT

The possible use of the Very Long Baseline Amplitude Interferometer in several programs of astrometric measurements and observations will be described. These programs include short-arc or differential astrometry, large-arc astrometry for zonal corrections in the FK-4 datalog and absolute astrometry primarily for the study of earth rotation. The basic techniques for these different applications, the relevant measurement precision and accuracy, and the related signal-to-noise ratios will be discussed. The role of the atmosphere and the critical atmospheric parameters, as they relate to the astrometric measurements, will be discussed including the atmospheric delay correction by the use of two separate wavelengths. The role of various types of ground motion i.e. seismic disturbance for the different types of astrometry will be discussed and data presented as to the possible effects. Measurements on the stability of equipment will also be included. In addition the use of a two color refractometer for site surveys and the evaluation of gravity waves in the atmosphere will be considered. The procedure for references to the vertical (which is required for earth rotation) will be considered.

* The manuscript of this paper was not received in time for inclusion in the Proceedings.

https://doi.org/10.1017/S0252921100118810 Published online by Cambridge University Press