September 1970 Brief 70-10431

NASA TECH BRIEF

Elimination of Redundancy in Telemetered Data

A new procedure is proposed for estimation of the intensity $h(\cdot)$ of a Poisson process, stationary or non-stationary; it does not require an a priori probability space for $h(\cdot)$ and can be readily programmed for execution on a general-purpose digital computer. The technique makes reduction of the sampling rate possible without sacrificing significant information, thereby eliminating the problem of redundancy in data transmission from counting experiments. The reliability of the estimate of $h(\cdot)$ is expressed in terms of the confidence relative error and the confidence coefficient.

To illustrate the technique's efficiency in reducing data redundancy, and its reliability in smoothing (or extraction of the regression curve) data from counting experiments, the technique is used for estimation of the density of energetic electrons in the auroral zone during a magnetic storm.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Headquarters
National Aeronautics
and Space Administration
Washington, D.C. 20546
Reference: TSP70-10431

Patent status:

No patent action is contemplated by NASA.

Source: Charles Vu-Son of
Bell Telephone Labs
under contract to
NASA Headquarters
(HQN-10585)

Category 06