CHAPTER IV

CONCLUSIONS

The study of properties of magneto-telluric field and the probability calculation are aids for estimating the future of the field. The results of calculation show what happened at the time the data were recorded, and the relation of records taken at different times. If the recorded data are taken at regular times of day, the results of calculation can provide on estimate of what may be in the future. The significance of the results of calculation depends on the sample size and the sampling time interval.

This analysis has useful application not only for magneto-telluric analysis, but as a method for generalized harmonic analysis.

Proposals for future study:

1. To calculate time phase relationships between pairs of records.

2. To derive a curve for the power spectra whose curves are similar at all instances of time. The auto-correlation is obtained by first taking the inverse Fourier transform of the power spectrum, and then estimating the future from the auto-correlation and the probability distribution function.

3. To program a digital computer subroutine for computing the Fourier transform and inverse Fourier transform by the Fast Fourier Transform.

4. To create extrapolation model of the magneto-telluric

field in the frequency domain, and comparing the results obtained from this method with those obtained from the method described in this thesis.

5. To develope a digital computer program to handle the three-dimensional magnetic field and the two-dimensional electric field.