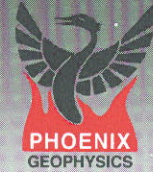


THE PHOENIX



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EARTHQUAKE PREDICTION IN FUTURE?

Suffering through more earthquakes than any other country in the world, Japan is certainly considered "seismically active".

To understand just how and why earthquakes occur (and someday to predict when) it is necessary to make detailed studies of the Earth's deep structure. Magnetotellurics (MT) is one of the few techniques capable of investigating the Earth's crust deeply enough to be useful.

The Geological Survey of Japan has used two Phoenix V-5-MT systems since 1988 to study the transecting structure of Japanese Islands. In 1994, four more V-5 MT systems were delivered to earthquake and volcanology research institutes of Kyoto University and Tokyo University. All the systems are being used by their owners as well as several other universities and institutes throughout Japan. A feature of this research unique to Japan is the comprehensive "multi-institute, multi-annual" field survey using shared geophysical equipment. Phoenix Vice-President Mitsuru Yamashita has translated a portion of the report, *Collected Papers of 1995 Conductivity Anomaly Research Meeting**, available to interested readers on request.

Besides studying the Earth's structure, scientists from many countries (China and Greece are two) have reported deep-seated resistivity changes when earthquakes occur. (The latest developments in this field were summarized in the book *Electromagnetic Phenomena Related to Earthquake Prediction*, editors M. Hayakawa and Y. Fujinawa, Terra Scientific Publishing Co., Tokyo, 1994, 677 pages.)



PHOTO: CHRISTINE THOMPSON

Mr. Ikeda, a post-graduate student at the University of Kyushu and the man in charge of the university's MT project, checks out data on a notebook with Phoenix's field manager, George Elliott.

George was in Japan recently to help with the installation of one of the stationary MT systems to be used for earthquake research by the Geographic Survey Institute of Japan.



* Edited by Y. Sasai, & H. Utada, Earthquake Research Institute, Tokyo U.; and N. Sumitomo, Disaster Prevention Research Institute, Kyoto U.)

Stationary networks of monitoring equipment are needed now to further our knowledge of deep resistivity changes which may be related to earthquake prediction. Early in 1996, two stationary V-5-MT systems will be installed in Mizusawa and Esashi, Geodetic Observatories of Japan's Geographical Survey Institute. The permanent installation facilities are now under construction. The systems are networked by telephone lines between Mizusawa, Esashi and Tsukuba Science City in order to carefully monitor deep-seated resistivity changes continuously in real time.

Phoenix has adapted and enhanced its V-5-MT system for this new and exciting application. Changes include the use of GPS-synchronized clocks, enhanced telecommunication capability, and simultaneous multi-band data acquisition.

— Mitsuru Yamashita

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