eEarth Discuss., 1, S51–S53, 2006
www.electronic-earth-discuss.net/1/S51/2006/

eEarth Discussions

Interactive comment on "Stimulated infrared emission from rocks: assessing a stress indicator" *by* F. T. Freund et al.

Z. Qiang

zuji_qiang@msn.com

Received and published: 16 August 2006

The paper by Dr. F. Freund et al. is of great theoretical and practical importance. Over the years infrared radiation as earthquake precursor has not been verified theoretically or experimentally. The well-designed experiments conducted by Dr. F. Freund et al. prove that rocks under pressure do emit infrared radiation, which is a huge progress toward our understanding of infrared radiation as earthquake precursors.

Numerous observations have proved that isolated earth surface temperature increase occurs before an earthquake and the zone of temperature abnormity moves toward the epicenter. As Prof. Dr. M. Wyss, chairman of the International Committee of Earthquake Prediction has pointed out, earthquake precursors must enable seismologists to pinpoint the three fundamental elements of an earthquake: epicenter, time, and mag-

nitude. 1 However, what puzzles earth scientists and earthquake prediction experts always is the fact that many of the so-called precursors could not provide the means by which the epicenter of a future earthquake could be determined.

Since 1990, the research group led by Dr. Zuji Qiang has utilized Meteorological satellite high-time-resolution infrared images to predict earthquakes. 2,3,4,5,6,7 More recently, the thesis by Chunying Wang of Taiwan National Institute of Geography, Environment and Resources Research reported that abnormal surface temperature increase had been observed for 13 shallow-focus earthquakes of magnitude ąÝ 5.9 during the period from 1999 to 2002. All these facts prove that infrared radiation does occur when rocks in the crust under forces, and an earthquake happens afterwards.

Question:

How do the conditions under which the experiment was conducted compare to the real world of an earthquake? What are the influences of the environments of an earthquake (depth, pressure, stress, and temperature) on the infrared radiation emitted?

Reference

1. Max Wyss, The Verfication of Earthquake Precursors, Abstracts of the International Workshop on electromagnetic Phynomena related to earthquake prediction, Tokyo, 1993

2. NRSCC. CEOS Special Report on Successful Applications of EO Satellite Date, Earthquake Prediction in China, Printed in the United Kingdom, 32-33, 1995

3. CSIRO & CEOS. Resources in Earth Observation, 1 cases studies, disaster mitigation, Earthquake Prediction in China, Laser dick CD-ROM, Produced by the CSIRO Office of Space Science, 1996

4. Qiang Zuji, Dian Changgong, Li Linzhi et al. Satellite Thermal Infrared Anomaly and Earthquake Prediction in Advance and in Short-term Earthquake Prediction in China, Dedicated to the 30th International Geological Congress. State Seismological Bureau,

eED

1, S51–S53, 2006

Interactive Comment

Beijing: Seismological Press, 186-194, 1996

5. Qiang Zuji, Dian Changgong, Zhao Yong The Temperature increase of The Earth's Surface Detected by Satellite in The Infra-red Band before The Strong Earthquake Swarms in Samal Island of the Philippines, Asian-Pacific Remote Sensing and GIS Journal, Volume 10, Number 1, 1997

6. Z. J. Qiang, C. G. Dian and L. Z. Li, Satellite Thermal Infrared Precursors of Two Moderate Strong Earthquake in Japan and Impending Earthquake Prediction, Atmospheric and Ionospheric Electromagnetic Phenomena Associated with Earthquakes, P. 747-750, By Terra Scientific Publishing Company, Tokyo, 1999.

7. Qiang Zuiji. Satellite-Based Prediction of Earthquakes. News letter, EARSEL, No 47, pp 21-26 (2001)

8. Chun-Ying Wang, Applying Spatio-Temporal Interpolation and Data Normalization Methods in Detecting Pre-Earthquake Abnormal Temperature Increasing Phenomenon, A Disseration submitted to the graduate Institute of the National Taiwan University in Partial Fulfillment of the requirement for the Degree of Doctor of Science in Geograph, 2005

Comments by DR. Zuji Qiang Institute of Geology, China Seismological Administration

---

Interactive comment on eEarth Discuss., 1, 97, 2006.