

User:Jichenggu

Jicheng Gu, known as a famous seismologist, and physicist in the fields of fracture mechanics, tribology, materials science, geophysics, source physics, laser fiber communication, chaos, and so on.

Contents

Brief Bio

Professional Academic Experience

Professional Experience

1. Research on Seismology :(1966-1994, now)

(1) Theoretical Studies

(2) Site Work

2. Research on Geomagnetism, Gravity

3. Laser Fiber Communication

4. Fracture Mechanics and Friction Constitutive Law

5. Teaching Experience

6. The organizer of the 1st and 2nd National Conference on Seismicity Function S in Beijing

7. R&D on Nano-Lubricant technology

8. R&D on High-Temperature PEMFC

9. R&D on Earthquake Prediction

Scientific Activities

Typical Selected Publications

List of Publication & Technical Reports

Family & Hobbies

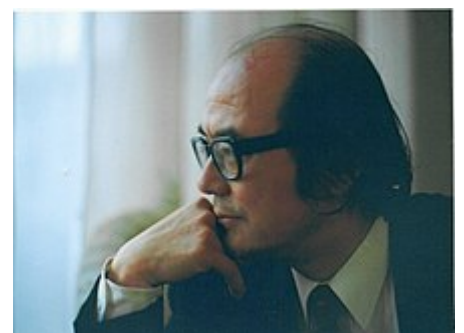
Family

Hobbies

Brief Bio

Born in Jan 22, 1941 in Leiyang, Hunan Prov. China.

- 1960, graduated from middle school, Hunan Province, China
- 1960-1966, Dept. of Physics /Geophysics, Peking Univ. Beijing China
- 1966 graduated from Peking Univ. and was assigned to The Institute of Geophysics, Chinese Academy of Sciences, Beijing, China
- 1980 U.S.A as a visiting scholar & research scientist at



Physicist, Seismologist

- Division of Engineering, Brown University, with Prof. J.R. Rice in 1980-1981
- Division of Applied Sciences, Harvard University with Prof. J.R. Rice in 1981-1984
- Dept. of EAPS, Massachusetts Institute of Technology (MIT) with Prof. K. Aki 1983-1984
- 1984 The Institute of Geophysics, Chinese Academy of Sciences, Beijing, China
- 1991, High-Tech O&E Corp (USA), CTO
- 2020, GU Institute of Earthquake Prediction, Chief Scientist

Professional Academic Experience

Professor in Fracture Mechanics & Physics of Earthquake Source at the Graduate School of Chinese Academy of Sciences, and The Graduate School of The University of Science & Technology, Beijing China.

Teaching graduate courses “Fracture Mechanics and Physics of Earthquake Source” and “Laser Fiber Communication” at The Graduate School of Science Academia Sinica, and of the University of Science & Technology of China in 1986.

The special invited expert and committee member of the 8th Five – Years Science Plan in Seismology, P.R. China. Special Expert granted by Dept. of Human Resource of P. R. China in 1985-1989.

Some scientific papers won the National Award.

1. Professor in LASER Fiber Communication at Research Institute of Post & Telecommunications, Wuhan China.
2. Associate Professor in the Institute of Geophysics, Chinese Academy of Sciences, and State Seismological Bureau, Beijing China.
3. AGU member (America Geophysical Union)

Professional Experience

1966 graduated from Peking University, worked in the Institute of Geophysics, Science Academy Sinica, and State Seismological Bureau, Beijing China for more than 24 years. As a senior scientist, mainly focus on seismology (from the theoretical study, site observation to a laboratory experiment, and teaching at the graduate school). Besides, he worked on Geomagnetism, Gravity, and Geophysical Prospecting. Fracture Mechanics, Stability Theory of Non-linear Physical Process (Friction Constitution Law, Chaos, and bifurcation), Laser Fiber Communication (Prof at the Wuhan Institute of Post & Telecommunications) and Fuzzy Mathematics (Visiting Prof. at Guangzhou University)

1. Research on Seismology :(1966-1994, now)

(1) Theoretical Studies

Physics of earthquake source (focal mechanism, rupture mechanics of earthquake), earthquake precursors and earthquake prediction, seismological observation.

Fracture mechanics and physics of earthquake source, stability theory of non-linear system (chaos and bifurcation), friction law, seismicity, the theory of seismic waves (generation and propagation), Far-field radiation theory from a circular dislocation expanding with varying velocity. And Lab experimental studies on the rupture process in large scale and 3-D; earthquake precursors and earthquake prediction. A Physical

Explanation of imminent precursory phenomena (an imminent precursory model). The theory and method of Discriminating earthquake type and Predicting Strong Aftershocks --Waiting Time Method (WTM). In order to quantitatively describe the seismic activity, a quantitative formula, seismicity function S was developed based on Fuzzy Mathematics, and two national conferences on this topic have been held in Beijing China (1987, 1989). Studies on frictional stability and friction constitutive law.

During the past 2 decades, Gu's scientific activities were mainly in the various aspects of seismology/geophysics.

(2) Site Work

Mar 1966 - July 1966, Seismological Observatory Group of XINTAI, the Institute of Geophysics, Academia Sinica). This is the site work for the Xingtai earthquake Mar. 8, 1966, M=7.2.

- Installation of Instruments (Seismograph, Geomagnetometer, Terrestrial meters. Gravity meters, and some precursory instruments).
- Seismogram analysis, observation of precursory phenomena, and preliminary studies on earthquake prediction.

Feb. 1971--Dec. 1971, Director of Lhasa Geophysical Observatory, Tibet, China.

- Daily routine operation and maintenance of seismograph, geomagnetometers.

As a technical consultant for the Set-Up Project of Cheng Zhou Seismological Station. All the work of this project from planning, selecting instrumentation and location of the station, installation and testing of instrumentation. The task of the seismological station is to monitor the micro-seismic activity around the special mineral area and reservoir area, and predict the potential risk of mine.

2. Research on Geomagnetism, Gravity

1967--1965, Institute of Geophysics, Science Academia Sinica, simp. as S.A.S.

- Seismo-magnetic phenomena, Piezo-magnetic effect, Electromagnetic induction
- Studies on Geomagnetism, basic field theory, variation field.
- Electromagnetic Induction and interior structure of the earth.
- Using transfer function studied the earth structure. In order to predict earthquake using the observed geomagnetic fields (variation field). A new method of transfer function of Z/H components was developed in 1970 to find the possible variation as a precursor in the transfer function for crust depth ranging from 1km to 20 km.

3. Laser Fiber Communication

As a professor at the Research Institute of Wuhan Post & Telecommunications, and Technical Consultant for Laser Device Factory, Wuhan, China 1986-1988

4. Fracture Mechanics and Friction Constitutive Law

Fracture mechanics, and stability theory of non-leaner mechanical system, chaos, and bifurcation. Friction constitutive law with rate and state dependencies

5. Teaching Experience

Teaching graduate courses "Fracture Mechanics and Physics of Earthquake Source", and "Laser Fiber Communication" at The Graduate School of Science Academia Sinica and of the University of Science & Technology of China in 1986.

6. The organizer of the 1st and 2nd National Conference on Seismicity Function S in Beijing

In April 1987 and Feb 19-24, 1989 respectively. This is the theory on a quantitative description of seismic activity: Seismicity Function S developed by Jiceng Gu, and his colleagues.

7. R&D on Nano-Lubricant technology

8. R&D on High-Temperature PEMFC

9. R&D on Earthquake Prediction

Scientific Activities

During past decades, invited for seminars hundreds in Chinese universities, and international, for instance:

- Paris University invited by Prof. Madariaga, Institute of Strasberg in France 1986, Bohn University & Frankfurt University invited by Prof. Burckhamer
- Science Academy of Czekoslovakia in Prague, invited by Prof. Kozak
- Hong Kong Chinese University (Dept of Physics), Visiting Prof. at Xiangnan Univ. Visiting Prof. at Hunan Univ.
- Visiting Prof. North China Univ.

Typical Selected Publications

1. Gu Jicheng (1980). *A physical explanation of imminent precursors; the model of crack stable propagating and fluids squeezing up*. **Northwestern Seismological Journal**, Supplement, pp1-9
2. Gu Jicheng and Lishuang (1982). *A far-field radiation theory of circular dislocation expanding with uniformly varying velocity, part (1)*. **Acta Geophysica Sinica**, Vol.25, pp.20-34.
3. Gu Jicheng and Li Shuang (1983). *A far-field radiation theory of circular dislocation expanding with uniformly varying velocity, part (2)*. **Acta Geophysica Sinica**, Vol.26, pp.17-30.
4. Gu Jicheng, J. Rice, A.Runia and S.Tse(1984), *Earthquake aftereffects and triggered seismic phenomena*, **PAGEOPH** Vol.121, No.2, pp.187-219.
5. Gu Jicheng(1984/5), *Frictional Resistance of accelerating slip*. **Pure & Applied Geophysics**, Vol.122, pp.62-79.
6. Gu, Jicheng(1986), *Friction constitutive law with rate and state dependencies*. **Pure & Applied Geophysics** vol.124, Nos 4/5, pp 27-46, 1986.
7. Gu Jicheng and K. Aki(1986). *Friction resistance of fault slip*. **Geophysical Research of China** Vol. 2, pp1-28.

8. Gu Jicheng(1987), *Applications of the method of discriminating earthquake type and of prediction of Strong after-shocks*, **EARTHQUAKE**, No,6. pp.1-9,1987
9. Gu Jicheng (1994), *Waiting Time Method (WT Method) for Prediction of Earthquake Type and of Strong Aftershocks* , **AGU Annual Meeting** in 1994 Spring Meeting May 23-27, Baltimore, Maryland, USA , Published as a supplement to EOS , April 19,1994. S518-10
10. Gu, Jicheng (2019), *On Seismic Precursory Waves*, Presented at GU Institute of Earthquake Prediction, to be submitted.

List of Publication & Technical Reports

1. Gu, Jicheng (2020), *A practical Prediction of the earthquake type and of strong aftershocks of Turkey Earthquake M=7.0 On Oct.30, 2020*), presented at **GU Institute of Earthquake Prediction**.
2. Gu, Jicheng (2019), *On Seismic Precursory Waves*, presented at **GU Institute of Earthquake Prediction** in 2020, Feb.
3. Gu, Jicheng (2008), *Application of Waiting Time Method (WTM) to Determine Earthquake Type and to Predict Strong Aftershocks to Wenchuan Earthquake, Sichuan, China*. Presented and submitted.
4. Gu, Jicheng (1992), *Application of the theory of friction constitutive law to lubrication study*, 1992, Technical Report , High-Tech O&E Corp. USA
5. Gu, Jicheng (1990), *The possible relationship between earthquakes and universal environmental factors-An application of fatigue fracture to earthquake prediction*. Presented in the **Institute of Geophysics, Science Academy Sinica**.
6. Gu, Jicheng (1989), *On mechanism of earthquake rupture*. **Proceedings of Conference on Earthquake, Research** (in Chinese), Hunan, China, 1987.
7. Gu, Jicheng (1989) , *A successful prediction of earthquake type on Batang strong earthquake swam*. Presented at the conference and on the Proceedings of "Sino-Japan Conference on Seismology, Beijing, China, May 1989 °
8. Gu, Jicheng, Wei Fusheng and Zhang Jiayan,(1989). *Spatial and temporal distributions of seismicity S in China*. Presented at the meeting and will appear on the Proceedings of the 2nd National Conference on Seismicity Function S (Beijing, China, Feb 11-23, 1989).
9. Wei Fusheng, Jayian Zhang, and Jicheng Gu. (1989), *The characteristics of temporal and spatial distributions of seismicity function S in North-East China*. Presented at the meeting and will appear on the Proceedings of "the 2nd National Conference on Seismicity Function S" Beijing China, Feb 19-23, 1989.
10. Gu, Jicheng (1989), *A new discovered relationship between Yijing (an ancient Chinese Book) and Number Theory*, **World Science and Technology** (in Esperanto).1.1989.
11. Gu, Jicheng (1988), *On the structure of the family spectrum of an earthquake sequence*, presented in the Institute of Geophysics, SSB China, 1988 °
12. Gu, Jicheng (1987), *On mechanism of earthquake rupture*. Proceedings of Conference on Earthquake Research (in Chinese), Hunan, China, 1987; presented at the meeting and appeared on the Proceedings of "Sino-Japan Conference on Seismology, Beijing, China, May 1989.
13. Gu, Jicheng and Wei Fusheng (1987), *A quantization of seismic activity--Seismicity Function S. (based on fuzzy Mathematics)*, **Earthquake Research in China**, Vol 3, pp12-22, 1987.
14. Gu, Jicheng (1987), *Applications of the method of discriminating earthquake type, and of prediction of Strong after-shocks*, **EARTHQUAKE**, No,6. pp. 1-9, 1987

15. Gu, Jicheng (1987). *Design of a new instrument for the observations of electric-potential above the Earth surface as a precursory phenomena*, 1987.
16. Gu, Jicheng (1986). Friction constitutive law with rate and state dependencies. *Pure & Applied Geophysics* vol.124, Nos 4/5, pp 27-46, 1986.
17. Gu, Jicheng and Wei Fusheng (1986). *Analysis of Seismicity Function S (t) of Chinese historic data*. **Earthquake Research in China** (in Chinese). Presented at the 2nd National Meeting of Seismological Society, Beijing, China, 1986, 10, Beijing China.
18. Gu Jicheng and K.Aki (1986). *Friction resistance of fault slip*. **Geophysical Research of China** Vol. 2, pp1-28.
19. Wei Fusheng and Gu Jicheng (1986). *Focal parameters of HEZE earthquake (M=5.9) of Nov.7, 1983, Shandong Province, China*. **Acta Seismologica Sinica**, Vol.8, pp.226-227.
20. Gu Jicheng (1986). *Theory on de-dimension*, Presented in **Institute of Geophysics**, SSB Beijing China.
21. Gu Jicheng (1985). *Possible application of laser fiber communication to Observations in geophysics*, **Seismological & Geomagnetic Observation & Research**, Vol.6, No.5, pp.63-66.
22. Gu Jicheng (1985). *A qualitative description of seismic activity--a application of fuzzy mathematics to seismology*. **Proc. of International Symposium of Fuzzy Mathematics on Earthquake Research**, July, 1985, Beijing China. Pp.237-243.
23. Gu Jicheng (1985). *A method of distinguishing earthquake type and predicting large aftershocks*. The selected Papers for the **35th Anniversary of the Founding of the Institute of Geophysics**, Beijing, 1986.
24. Gu Jicheng, Zhou Y, Wei F. (1985). *The distinguishing the secondary order of aftershocks and its characteristics*, Presented the **Institute of Geophysics**, SSB Beijing China.
25. Gu Jicheng. *Stability theory of frictional slip and friction constitutive law*. **Proc. of the 2nd Symp. on Computational Geophysics**, Fuzhou, Fujian Province, China, pp.43-5.
26. Gu Jicheng (1985). *A new idea: the edge model for the explanation of subduction zone*. **Proc. of the 2nd Symp. on Computational Geophysics**, Fuzhou, Fujian Province, pp.14-24.
27. Gu Jicheng (1984/5). *Frictional strength of accelerating slip*, **Pure & Applied Geophysics**, Vol.122, pp.62-79.
28. Gu Jicheng(1984). *Coupling theory of laser diode-fiber, part (1): a review. Part (2): a new method*. Technical report.
29. Gu Jicheng, J. Rice, A.Runia and S.Tse (1984). *Slip motion and stability of a single degree of freedom elastic system with rate and state dependent friction*. *J. Mech. Phys. Solids* Vol. 32 No. 3 pp.16-196, 1984 .
30. Rice J.R. and Gu Jicheng (1983). *Earthquake aftereffects and triggered seismic phenomena*. **PAGEOPH** Vol.121, No.2 pp.187-219.
31. Gu Jicheng (1983). *Two special motion states of a single degree of freedom elastic system*. Presented at the **Workshop of Frictional law, DAS, Harvard University**, 4/28-5/2, 1983.
32. Gu Jicheng and Li Shuang (1983). *A far-field radiation theory of circular dislocation expanding with uniformly varying velocity, part (2)*. **Acta Geophysica Sinica**, Vol.26, pp.17-30.
33. Gu Jicheng and Li Shuang (1982). *A far-field radiation theory of circular dislocation expanding with uniformly varying velocity, part (1)*. **Acta Geophysica Sinica**, Vol.25, pp.20-34.
34. Gu Jicheng, Xie Xiaobi and Zhao Li(1982). *On spatial distribution of large aftershocks of the sequence of a major earthquake and preliminary theoretical explanation*. **Acta Seismologica Sinica**, Vol.4, pp.380-389.
35. Xu,Shigang, Gu,Jicheng. *Preliminary analysis of gravity data on the South Tuvalu Reef Group Area*. **Acta Oceanologica Sinica**, Vol.4, pp.335-345.
36. Zhang Z.L., Li Q.Z., Gu J.C., et al.,(1980). *The fracture process of Tangshan earthquake and its mechanical analysis*. **Acta Seismologica Sinica**, Vol.4, pp.380-389.

37. Gu Jicheng (1980). *A physical explanation of imminent precursors; the model of crack stable propagating and fluids squeezing up*. **Northwestern Seismological Journal**, supplement, pp1-9.
38. Gu Jicheng (1980). *On study of mechanical process earthquake in the light of fracture mechanics*. **Scientific Research on Seismology**(in Chinese), pp.30-36.
39. Gu Jicheng, Xie X.-b.,and Zhao Li (1979). *On temporal distribution of large aftershocks of the sequence of a major earthquake and preliminary theoretical explanation*. **Acta Geophysica**, Vol.22, pp.32-46. **Chinese Geophysics** by AGU, Vol.2.
40. Gu Jicheng (1975). *Design of noise-cancelling sensor for proton procession magnetometer*. A technical report. Institute of Geophysics.
41. One of the four translators of the book "Spectral Analysis and its Application In Geophysics" by M. Bath (from English to Chinese), 1978, Seismological Press.
42. One of the translators of the Selected Papers "On the Theories and Experiments in Seismology" from Russian and English papers, Seismological press, 1978.
43. One of the translators of the book "Physics of Earthquake Source" Edited by M.A. Sadofsky (from Russian to Chinese) Seismological press, 1982.
44. Chen Peishan, Gu Jicheng and Li Wenxiang (1977). *A study of the earthquake faulting process and earthquake prediction in the light of fracture mechanics*. **Acta Geophysica Sinica**, Vol.20, pp.185-202.
45. Gu Jicheng (1994). *Waiting Time Method (WT Method) for Prediction of Earthquake Type and of Strong Aftershocks* , **AGU Annual Meeting** in 1994 Spring Meeting May 23-27, Baltimore, Maryland, USA , Published as a supplement to EOS , April 19,1994. S518-10

Family & Hobbies

Family

Jicheng's wife was a Chinese dancer, and Chinese folk dance choreographer and teacher in Beijing, China. And the owner of Wonderful Travel Int'l agency in Boston. Two sons both are graduated from Harvard University. One works at Wall Street in NY. Another is a tenured Professor at the Dept. of Physics, Alberta Univ. Canada. as a seismologist.

Hobbies

- Chinese traditional Medicine (Chinese medicine and acupuncture), Yijing, and health preserving. Was a barefoot-doctor in 1968-1970, In Tianjin, China.

Learning traditional Chinese medicine from his master, Mr. Chen Liepan.

- Music. Is an amateur musician. He composed a piece of music song <Hometown> won the first prize in a National Music Competition, 2004, in China.

Retrieved from "<https://en.wikipedia.org/w/index.php?title=User:Jichenggu&oldid=991853860>"

This page was last edited on 2 December 2020, at 03:56 (UTC).

Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the Terms of Use and Privacy Policy. Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.