



Dr. Ashwani Kumar
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Professor

Date of Birth

January 12, 1949

Areas of Interest

Engineering Seismology, Study of Microearthquake Activity at Engineering Project Sites Employing Local Seismological Networks, Strong Ground Motion Seismology, Deployment of Strong Motion Networks in the Seismically Active Regions, Development of Computer Programs for the Estimation of Hypocenter Parameters and source Parameters, Geophysical Prospecting for Base Metals employing Airborne and Ground Geophysical Surveys

1. Educational Qualification

- BSc. - Punjab University (1968)
- MSc. - Banras Hindu University(1970) - (Geophysics)
- PhD - University of Roorkee,(1988)

Academic/Professional Career

Employment record and Post Held :

University College	Designation	Period
University of Roorkee	Professor	31-08-1994 - till date
University of Roorkee	Reader (Selection Grade)	23-06-1992 - 30-08-1994
University of Roorkee	Reader	23-06-1982 - 22-06-1992
University of Roorkee	Lecturer	15-11-1978 - 22-06-1982

Top

Other related experience (Research and Industrial) :

Organisation / Employer	Designation/Project Title	Period
University of Roorkee	Jr. Scientist	03-06-1977 - 14-11-1978
Geological Survey of India	Assistant Geophysicist	12-11-1973 - 02-06-1977
Geological Survey of India	STA (Geophysics)	08-09-1971 - 11-11-1973
Banaras Hindu University	JRF under CSIR	July, 1970 - Sept., 1971

Membership of Scientific and Professional Societies

Life Member - Indian Society of Earthquake Technology (ISET)
Life Member - Indian Geotechnical Society (IGS)

Top

Honors and Awards :

ISET AWARD 1994 for the paper "Microearthquake activity in the Environ of proposed Tipaimukh Dam Site, Manipur" published in the society bulletin vol. 31, no. 4, 1994

Thesis Guided :

Ph.D and M.E.	Three
M.E	Three
Ph.D.	One

Top

Participation in conferences and short -term courses

- Eleventh Symposium on Earthquake Engineering, University of Roorkee, Roorkee, December 17-19, 1998.
- Tenth Symposium on Earthquake Engineering, University of Roorkee, Roorkee, (November 16-18, 1994.)
- International Training Course on Seismology and Seismic Risk Mitigation, University of Roorkee, Nov. 1- Dec. 6, 1993.
- World Congress on Natural Hazard Reduction, New Delhi, January 10-14, 1992.
- Workshop on "Microzonation of Urban Centers", New Delhi, Sep. 30 to Oct. 1, 1991.
- Ninth Symposium on Earthquake Engineering, University of Roorkee, Roorkee, December 14-16, 1990. Submitted three and presented two papers.

Top

Professional Experience:

30 years of research , teaching and field experience in the areas of Engineering Seismology, Seismotectonics and Geophysical Exploration for base metals.

HIGHLIGHT OF ACADEMIC AND PROFESSIONAL CAREER

- Principal Investigator of the project entitled "Seismological Network around Tehri Region". The project is being operated by the Department of Earthquake Engineering (DEE), University of Roorkee (UOR) since July, 1995. The study involves processing and interpretation of seismological data collected through the deployment and operation of a six station radio-linked local seismological network in Tehri region. The aim of the study is to investigate seismological conditions around the site of a 260.5M high earth and rockfill dam prior to reservoir loading and also to study the seismicity changes associated with the reservoir filling. The dam is under construction in the Garhwal Lesser Himalaya. The monitoring of local seismicity started in July 1995 and will continue up to October 2001.
- Course Director of the Fourth Science and Engineering Research Council (SERC) summer school on "Seismology and Earthquake Processes (SEP-IV)" held at the University of Roorkee from April 12-30, 1999. The school was sponsored by Department of Science and Technology (Govt. of India) and laid special emphasis on "Strong Ground Motion Seismology". Under this program more than twenty young scientists and engineers belonging to various organisations of the country were imparted theoretical knowledge and practical training covering various domains of seismology namely,
 - i. Seismology and Earthquake Processes,
 - ii. Seismic Zoning, Hazard Estimation and Reduction, and
 - iii. Strong Motion Seismology.
- Organising Secretary of the Eleventh Symposium on Earthquake Engineering held at the Department of Earthquake Engineering, University of Roorkee from December 17-19, 1998. Since 1959 such symposia are organized at an interval of four years for the purpose of promoting and disseminating knowledge in the Earthquake Engineering and allied fields including seismology.
- Principal Investigator of the research project entitled "Digital Telemetered Seismic Array in Ganga-Yamuna valley for the Monitoring of Local Seismicity ". The project, sponsored by Department of Science and Technology., New Delhi, was operated by the DEE (UOR) for a period of three years (May 1992 to July 1995). The studies were completed successfully.
- Principal Investigator of the project "Microearthquake studies for Tipaimukh Dam project Manipur". The project, sponsored by Bharamaputra board and operated by DEE (UOR) for a period two years (1990-1992). The studies were completed successfully.

- Co-Principal Investigator of the research project entitled "Strong Motion Array in North-East India". This project, on strong motion array program, sponsored by Department of Science and Technology, (Govt. of India) was operated by the DEE (UOR) for three years (1984-1987). The studies were completed successfully.
 - Under Indo-US collaborative research project, sponsored by National Science Foundation (USA) entitled "Strong Motion Instrumentation Array in Shillong Region" planned and installed first Strong Motion Array in India in the epicentral region of the great Kangra Earthquake of 1905. The Array is located in the Himachal Himalaya. The project was operated by the DEE (UOR) for three years (1982-85) and studies were completed successfully.
 - Installation and operation of three temporary microearthquake networks of mobile smoked paper seismographs for dam site seismicity studies for various engineering projects in India. (duration 1980-85). The studies were carried out around Navagam dam site located in state of Gujarat, Jamarani dam site located in the state of Uttar Pradesh and Chamera dam site falling in the state of Himachal Pradesh.
 - Deployed a Telemetered Network around a Atomic Power Plant site in India (year 1989).
 - Operated a temporary network of mobile smoked paper seismographs for Geothermal studies in Puga valley (Ladakh Himalaya) in the year 1978. The study was carried out in collaboration with India Meteorological Department (New Delhi)
- Deployment of a microearthquake Network at Kotemale project site in Sri-Lanka and training of Sri-Lanka personnel for the management of microearthquake network and processing of seismological data. Operation of this project resulted in the Transfer of the Technical Known-how to the developing Neighboring Country. (year 1982-84)
- Carried out post-earthquake damage investigations for the four moderate sized earthquakes occurred in the Himalaya and in the Peninsular India. The earthquakes investigated are the Indo-Nepal earthquake of 1979, the Dharamsala earthquake of 1986, the Uttarkashi earthquake of 1991 and the Jabalpur earthquake of 1997.
 - Listed in International Contacts by "Earthquake Engineering Research Institute (ERRI)", USA for coordinating and carrying out post earthquake damage survey in India.
 - Developed Nonlinear Inverse Program for the estimation of hypocenter parameters (year 1986-1987).
 - Guided Shri Vinod Singh, visiting scientist from Nepal under INSA-RONAST exchange program for the seismotectonic study of Nepal. (year 1991).
 - Worked as Exploration Geophysicist in the Airborne Mineral Survey and Exploration wing of Geological Survey of India from Sept. 1971 to May, 1977 and conducted mineral exploration work employing geophysical methods of prospecting.

Publications :

Paper

Papers published in referred journals
Papers published in conferences and symposia
Review Articles
Unpublished Scientific and technical reports

Number

Six
Nineteen
Two
Twenty eight

Top

LIST OF PUBLICATIONS

- Papers in referred journals
 1. Gupta, S.C., Ashwani Kumar, V.N. Singh, and S. Basu, Lapse-time dependence of Q_c in the Garhwal Himalaya, Bull. Ind. Soc. Earthquake Technology, Vol. 33, pp 147-159.
 2. Gupta, S.C., V.N. Singh, and Ashwani Kumar (1995). Attenuation of Coda waves in the Garhwal Himalaya, India, Physics of the Earth and Planetary Interiors, Vol. 87, pp. 247-253.
 3. Verma, A.K. and Ashwani Kumar (1994), Microearthquake activity in the environ of proposed Tipaimukh dam site, Manipur, Bull. Ind. Soc. Earthquake Technology, Vol. 31.
 4. Ashwani Kumar and P.N. Agrawal (1989). Earthquake location problem-second order derivatives for multi-layer earth and their implications, Bull. Ind. Soc. Earthquake Technology, Vol. 26, 1-48.
 5. Agrawal, P.N. and Ashwani Kumar (1982). Microearthquake Recording for Engineering Applications, Engineering Geosciences Volume, pp. 181-186, Sarita Prakashan, New Delhi.
 6. Ashwani Kumar, P.N. Agrawal and Vira Massih (1980). Seismicity survey of Tehri Dam Region prior to reservoir impounding, Proceedings 7 WCEE, 197-200.
- Papers in Conferences/Symposia
 1. Ashwani Kumar, Rajeev Kumar and S. K. Jain (1998). Strong Ground Motion Attenuation Relation for Himachal Pradesh and Adjoining regions. XI Symposium on Earthquake Engineering, University of Roorkee, Roorkee, Dec. 17-19, 1998 Vol. I.
 2. Ashwani Kumar, A. D. Pandey, M. L. Sharma, S. C. Gupta, A. K. Jindal and S. K. Jain (1998). Pattern of Two Earthquake swarms in the Garhwal Himalaya. XI Symposium on Earthquake Engineering, University of Roorkee, Roorkee, Dec. 17-19, 1998 Vol. I.

3. Gupta, S. C. and Ashwani Kumar (1998). Qc and Qb Estimates in the Garhwal Himalaya using Strong Motion Records of Uttarkashi Earthquake. XI Symposium on Earthquake Engineering, University of Roorkee, Roorkee, Dec. 17-19, 1998 Vol. I.
4. Ashwani Kumar, A. D. Pandey, M. L. Sharma, S. C. Gupta, A. K. Jindal and S. K. Jain (1997). Contemporary Local Seismicity of the Garhwal Himalaya, Proc. Workshop on Earthquake Disaster Preparedness, Oct. 13-14, 1997, Roorkee.
5. Narayan, J. P. and Ashwani Kumar (1997). Field Observations and Intensity Distribution Related to Jabalpur Earthquake of May 22, 1997. Proc. Workshop on Earthquake Disaster Preparedness, Oct. 13-14, 1997, Roorkee.
6. Ashwani Kumar and Mukesh Kumar (1994). Earthquake Precursors from Seismicity Data Obtained from Chamara Region (H.P.), Xth Symposium on Earthquake Engineering, University of Roorkee, Nov. 16-18, 1994.
7. Ashwani Kumar, A.D. Pandey, M.L. Sharma, S.C. Gupta, A.K. Verma, and B.K. Gupta (1994). Processing and Preliminary Interpretation of Digital Data Obtained from Digital Telemetered Seismic Array in the Garhwal Himalaya, Xth Symposium on Earthquake Engineering, University of Roorkee, Nov. 16-18, 1994.
8. Ashwani Kumar (1990). Efficacy of linear and nonlinear inverses for estimation of hypocenter parameters, 9th Symposium on Earthquake Engineering, University of Roorkee, Dec. 14-16, 1990 Vol.II (in press).
9. Ashwani Kumar and P.N. Agrawal (1990). Focal depths and rate of microearthquake activity in the Western Himalaya, 9th Symposium on Earthquake Engineering, University of Roorkee, Dec. 14-16, 1990.
10. Thakkar, S.K., D.K. Paul, S. Mukerjee, S. Bandyopadhyay, Ashwani Kumar, Brijesh Kumar and B.V.K. Lavania (1990). Damage caused by the Bihar-Nepal Earthquake of August 21, 1988, 9th Symposium on Earthquake Engineering, University of Roorkee, Dec. 14-16, 1990 Vol.II (in press).
11. Thakkar, S.K., D.K. Paul, S. Mukerjee, S. Bandyopadhyay, Ashwani Kumar and B.V.K. Lavania (1991). Behavior of buildings in August 21, 1988 Bihar-Nepal Earthquakes, Second International Conference on Recent St. Louis, Missouri (USA) March 11-15, 1991.
12. Arya, A.S., B.V.K. Lavania, S.P. Gupta and Ashwani Kumar (1986). Dharamsala earthquake of April 26, 1986, Proceedings of 8th Symposium on Earthquake Engineering, Univ. of Roorkee, 2, 73-90.
13. Ashwani Kumar and J. Das (1986). Strong Motion Array programme around Kangra and Shillong Region, Proceedings of 8th Symposium on Earthquake Engineering, University of Roorkee, Vol. 2, 101-107.
14. Ashwani Kumar (1984). A strong motion instrument array in the Epicentral Region of Great Kangra Earthquake of 1905, Second Workshop on All India Coordinated Project on Seismicity and Seismotectonics of Himalayan region, Dec. 3-5, 1984, Wadia Institute of Himalayan Geology, Dehradun.

15. Srivastava, L.S., A.R. Chandrasekaran, Ashwani Kumar and S. Basu (1984). A strong motion array in Northeast India, Second workshop on All India Coordinated Project on Seismicity and Seismotectonics of Himalayan region, Dec. 3-5, 1984, Wadia Institute of Himalayan Geology, Dehradun.
16. Ashwani Kumar, P.N. Agrawal and M.K. Bansal (1982). Seismic Activity of Krol thrust in the Environ of Jamrani Dam Site, U.P., VII Symposium on Earthquake Engineering, University of Roorkee, Roorkee, Nov. 10-12, 1982 Vol. I.
17. Ashwani Kumar, P.N. Agrawal and A.R. Chandrasekaran (1981). A study of Indo-Nepal Earthquake of May 21, 1979, Proceedings of Symposium on Earthquake Disaster Mitigation, Univ. of Roorkee.
18. Sogani, K.C., D.N. Dutte, Ashwani Kumar (1976). Geophysical surveys for base metals in Wari-Lunera area, Distt. Chittaurgarh (Rajasthan), paper presented at Symposium at Bangalore (India) during 125 years Celebration of Geological Survey of India (1976).
19. Sogani, K.C., B.N. Dutta and Ashwani Kumar (1976). Geophysical surveys for sulphide deposits in Surahri area, Distt. Jhunjunu, (Rajasthan), paper presented in symposium at Bangalore during 125 years celebration of Geological survey of India.

- Review Articles

1. Ashwani Kumar, (1994). Monitoring of Aftershock Activity, Preparedness for Post Earthquake Disaster Surveys, University of Roorkee, Roorkee, Dec. 22-23, 1993.

Ashwani Kumar, (1994). Associated Phenomena like Weather Anomaly, Earthquake Sound, Radon Gas Emission, Emission of Light, Magnetic Anomalies and Mythological Observations, Preparedness for Post Earthquake Disaster Surveys, University of Roorkee, Roorkee, Dec. 22-23, 1993