



Name: Dr. Anurag Linda

Designation: Assistant Professor

Contact Details: +91 9816444615

Academic Qualification: **Ph.D:** School of Environmental Sciences, JNU, New Delhi, INDIA

M.Phil: School of Environmental Sciences, JNU, New Delhi, INDIA
M.Sc School of Environmental Sciences, JNU, New Delhi, INDIA

B.Sc (Hons): Geology St. Xavier's' College, Ranchi, Jharkhand, INDIA

Positions Held:

2009 – 2012: DST Young Scientist at School of Environmental Sciences, JNU, New Delhi, INDIA. Project Name: "Glacier Dynamics of Chhota Shigri Glacier, Lahaul & Spiti valley, Himachal Pradesh, INDIA" (Project awarded by Department of Science and Technology, Government of India, New Delhi).

2008 – 2009: Senior Research Fellow at School of Environmental Sciences, JNU, New Delhi, INDIA. Project Name: "Glacier Mass, Energy and Hydrological Balance of Chhota Shigri Glacier, INDIA" (Indo- French Project)

Specialisation: Glaciology

Research Interest:

- Glacier Mass Balance
- Glacier Dynamics
- Climate Glacier Interaction
- Glacial Remote Sensing

LIST OF PAPERS:

Publications:

- i. Mohd. Farooq Azam · Al. Ramanathan · Patrick Wagon · Christian Vincent · **Anurag Linda** · E. Berthier · Parmanand Sharma · Arindan Mandal · Thupstan Angchuk · Virendra Bahadur Singh · Jose George Pottakkal: Meteorological conditions, seasonal and annual mass balances of Chhota Shigri Glacier, western Himalaya, India, *Annals of*

Glaciology, 57(71):328-338, **2016**.

- ii. S Dutta, AL Ramanathan, **A Linda**, JG Pottakkal, VB Singh, T Angchuk: Glacier Mass Balance and Its Significance on the Water Resource Management in the Western Himalayas, Management of Water, Energy and Bio-resources in the Era of Climate Change: Emerging Issues and Challenges, *Springer International Publishing*, 73-83, **2015**.
- iii. JG Pottakkal, A Ramanathan, VB Singh, P Sharma, MF Azam, **A Linda**: Characterization of subglacial pathways draining two tributary meltwater streams through the lower ablation zone of Gangotri glacier system, Garhwal Himalaya, India, *Current Science* 107 (4), 613, **2014**.
- iv. Azam Mohd Farooq, Patrick Wagnon, Christian Vincent, Alagappan Ramanathan, **Anurag Linda** and Virendra Bahadur Singh: Reconstruction of the annual mass balance of Chhota Shigri glacier, Western Himalaya, India, since 1969, *Annals of Glaciology*, 55, 6, **2014**.
- v. Virendra Bahadur Singh, Al Ramanathan, Jose George Pottakkal, Parmanand Sharma, **Anurag Linda** and Mohd Farooq Azam: Decadal variation in the major ion chemistry of Chhota Shigri glacier meltwater, Lahaul-Spiti valley, Himachal Pradesh, India. *Climate Change and Environment*, pp. 159-166. ISBN: 978-81-7233-833-6. **2013**
- vi. **Anurag Linda**, Al Ramanathan, Parmanand Sharma, Thupstan Angchuk, Virendra Bahadur Singh, Jose George Pottakkal, Arindan Mandal, Naveen Kumar, Mohd Farooq Azam, Patrick Wagnon and Christian Vincent: Seasonal mass-balance determination in the Indian Himalaya: Chhota Shigri Glacier, Himachal Pradesh, 2009-2012, *Abstract (66A162) accepted in International Glaciological Meeting, Beijing, China (28 July–2 August 2013)*
- vii. Virendra Bahadur Singh, AL Ramanathan, Jose George Pottakkal, Anurag Linda, Parmanand Sharma: Temporal Variation in the Major Ion Chemistry of Chhota Shigri Glacier Meltwater, Lahaul–Spiti Valley, Himachal Pradesh, India, *National Academy Science Letters*, 36,3, 335 – 342, **2013**.
- viii. C. Vincent, A. Ramanathan, P. Wagnon, D. P. Dobhal, **A. Linda**, E. Berthier, P. Sharma, Y. Arnaud, M. F. Azam, P. G. Jose, and J. Gardelle.: Mass gain of glaciers in Lahaul and Spiti region (North India) during the nineties revealed by in-situ and satellite geodetic measurements, *The Cryosphere*, 7, 569 – 582. **2013**.
- ix. Dutta Shrutti, Ramanathan, Al. and **Linda Anurag**:

Glacier Fluctuation Using Satellite Data In Beas Basin, 1972-2006, Himachal Pradesh, India, *Journal of Earth System Sciences*, JESS-D-11-00235, **2012**.

- x. *Virendra Bahadur Singh, AL. Ramanathan, Jose George Pottakkal, Parmanand Sharma, **Anurag Linda** and Mohd. Farooq Azam*,: Chemical characterisation of meltwater draining from Gangotri Glacier, Garhwal Himalaya, India, *Journal of Earth System Sciences*. Vol. 121, No. 3, pp. 625–636, **2012**.
- xi. *Mohammed Farooq Azam, Patrick Wagnon, Alagappan Ramanathan, Christian Vincent, Parmanand Sharma, Yves Arnaud, **Anurag Linda**, José George Pottakkal, Pierre Chevallier, Virendra Bahadur Singh, Etienne Berthier*: From balance to imbalance: a shift in the dynamic behaviour of Chhota Shigri Glacier (Western Himalaya, India), *Journal of Glaciology*, Vol. 58, No. 208, **2012**.
- xii. *Jayalakshmi Devi Oinam, AL. Ramanathan, **Anurag Linda**, Gurmeet Singh* : A study of arsenic, iron and other dissolved ion variations in the groundwater of Bishnupur District, Manipur, India. *Environ Earth Sci*, 62, 1183-1195, **2011**.
- xiii. *Shruti Dutta, Al Ramanathan, **Anurag Linda***: Estimating Glacier Retreat through Satellite Based Observation In the Beas Basin, Himachal Pradesh, India, EGU General Assembly Conference Abstracts, 12, 6013, **2010**.
- xiv. *Patrick Wagnon, **Anurag Linda**, Yves Arnaud, Rajesh Kumar, Parmanand Sharma, Christian Vincent, Jose George Pottakkal, Etienne Berthier, Alagappan Ramanathan, Syed Iqbal Hasnain, Pierre Chevallier, **2007***: Four Years Of Mass Balance On Chhota Shigri Glacier, Himachal Pradesh, India, A New Benchmark Glacier In The Western Himalaya. *Journal of Glaciology*, Vol. 53, No.183.
- xv. *Rajesh Kumar, Syed I. Hasnain, Patrick Wagnon, Yves Arnaud, Pierre Chevallier, **Anurag Linda**, Parmanad Sharma, **2007***: Climate Change Signals Detected through Mass Balance Measurements on benchmark Glacier, Himachal Pradesh, India. *UNESCO, Paris / UMR 5569*

Book chapters

- i. *Virendra Bahadur Singh, AL. Ramanathan, Jose George Pottakkal, Parmanand Sharma, **Anurag Linda**, C. Chatterjee, Thupstan Angchuk & Arindan Mandal (2013)*. Hydrochemistry of meltwater emerging from Raktvarn glacier, central Himalaya, India. In: J Sundaresan, Pankaj Gupta, K.M. Santosh,

Ram Boojh (eds) Climate Change & Himalayan Ecosystem-indicator, Bio & Water Resources. *Scientific Publishers* (India), pp. 109-118. ISBN 978-81-7233-847-3.

- ii. *Alagappan Ramanathan, Shruti, P.G. Jose, Parmanand Sharma, Anurag Linda, 2007: Glacier Retreat of Himalayas in the Recent Past (Pleistocene to Recent Decade). International Workshop (IGCP-514) on Fluvial and Marine Processes of Cenozoic and Formation of Placers, Thiruvananthapuram, Nov 1-10, 2007, INDIA, Edited by Dr. D.S. Suresh Babu, P.No. 51 – 5.*

Papers in Conferences Proceedings:

- i. *Jyoti Dogra, Anurag Linda, 2015: Annual discharge variations of Manjhi, Bhagsu and Nugal Khad, Kangra, Himachal Pradesh, National Workshop on Recent Trends in Environmental Sciences and Carbon Management (RTCM – 15), School of Earth and Environmental Sciences, CUHP, Dhramshala, 19 – 20 November 2015, INDIA.*
- ii. *Vijay Kumar, Anurag Linda, 2015: A preliminary study of geomorphological features and deglaciation pattern of Dhundi glacier, Manali, Himachal Pradesh, National Workshop on Recent Trends in Environmental Sciences and Carbon Management (RTCM – 15), School of Earth and Environmental Sciences, CUHP, Dhramshala, 19 – 20 November 2015, INDIA.*
- iii. *Anurag Linda, 2014: Role of Glaciers in the River Water Resource Management in the Western Himalaya, National Conference on Implications of Climate Change on Himalayan Environment ICHE – 14, School of Earth and Environmental Sciences, CUHP, Dhramshala, 20 – 21 March 2014, INDIA.*
- iv. *Tenzin Dolker, Rita Devi, Munisha Sharma, Anurag Linda, 2013: A Review of Traditional Water Harvesting Techniques in Himachal Pradesh, "Regional Workshop on Managed Aquifer Recharge in Hills & Valleys of Himachal Pradesh" March 6, Central Ground Water Board/NHR/IEC/ Dharamshala, INDIA.*
- v. *Ranjana Kumari, Munisha Sharma, Savita Verma, Anurag Linda, 2013: An overview of traditional water harvesting techniques in India, "Regional Workshop on Managed Aquifer Recharge in Hills & Valleys of Himachal Pradesh" March 6, Central Ground Water*

- vi. AL. Ramanathan , **Anurag Linda**, Pottakkal George Jose ,Parmanand Sharma ,Mohd. Farooq Azam, Virendra Singh and Patrick Wagnon 2012: Winter accumulation and annual mass balance status of glaciers in Lahaul-Spiti, Himachal Pradesh, India, *Trans-Himalayan Workshop on Glaciers, Snow Melt and Runoff in the Himalayas, ICIMOD, Kathmandu,, February 6-7, 2012, NEPAL.*
- vii. **Anurag Linda**, Al. Ramanathan, Shruti, Jose pottakkal, Parmanand Sharma & Virendra Bahadur 2012: Glacio-Morphological Studies Through Field Observations: A Case Study Of Chhota Shigri Glacier, Himachal Pradesh, India, International symposium on Cryosphere and climate change (ISCCC – 2012),02 – 04 April 2012, SASE, Manali, INDIA.
- viii. **Anurag Linda**, Al. Ramanathan, Parmanand Sharma and P.G.Jose,2010: The Danger of Retreating Himalayan Glaciers and GLOF, National level workshop on geomatic based natural resources disaster mitigation and managements(GEO DIMMS) held from 22-26 February at Tamil University, Thanjavur, INDIA.
- ix. Parmanand Sharma, AL. Ramanathan, Sudarshana Sharma, **Anurag Linda** and P.G Jose, 2010: Impact of landslide and Landslide Lake Outbursts Flood (LLOF) in the Himalayan region, National level workshop on geomatic based natural resources disaster mitigation and managements(GEO DIMMS) held from 22-26 February at Tamil University, Thanjavur, INDIA.
- x. Virendra Bahadur Singh, AL. Ramanathan, P.G.Jose, Parmanand Sharma, **Anurag Linda** 2010: *Climate Change Impact on Chhota Shigiri Glacier, Lahaul-Spiti Valley, Himachal Pradesh, India, (ISBN: 978-93-80697-25-3). International Conference on Emerging Technologies for Sustainable Environment held from 29-30 October 2010 at Department of Civil Engineering, Z.H College of Engineering & Technology, A.M.U, Aligarh, INDIA, and Pg.201-206.*
- xi. AL. Ramanathan, Parmanand Sharma, **Anurag Linda**, and Jose George Pottakkal, 2009: Impact of Climate Change on The Meltwater Discharge of The Chhota Shigri Glacier, Himachal Pradesh, India. Proceedings Paper, Symposia on Impact of climate change held from 27-28 May, 2009 at National Hydraulic Research

Institute of Malaysia (NAHRIM), MALASIA.

- xii. **Anurag Linda**, Al. Ramanathan, Parmanand Sharma, G Senthil Kumar, Shruti and P G Jose, 2008: Mass balance studies using field data in Chhota Shigri Glacier, HP, India. In Proceedings (Annexure) International workshop on Snow, Ice, Glacier and Avalanches. 07-09 January 2008 -Mumbai, India. Organized by Centre of Studies in Resource Engineering, IIT- Bombay, INDIA.
- xiii. Parmanand Sharma, Al. Ramanathan, **Anurag Linda**, Jose George Pottakal, Shruti ,Patrick Wagnon, Eves Arnaud and Pierre Chevallier, 2008: Preliminary Studies on the Mass Balance of Chhota Shigri glacier, Himachal Pradesh, India. Proceedings Paper, Workshop on mass balance measurements and modeling held from 25–28 March 2008 at Skeikampen, Norway and online by International Glaciological Society (at annals@igsoc.org), NORWAY.
- xiv. Al. Ramanathan, Parmanatah Sharma, **Anurag Linda**, Shruthi, Jose P.G, 2008: Preliminary studies on the Mass Balance of Chhota Shigri Glacier India, Workshop on mass balance measurements and modeling, IGS Symposia, Skeikampen, NORWAY (26-28 March 2008)

Research Projects Completed/Ongoing:

Completed Project:

Project Name: “Glacier Dynamics of Chhota Shigri Glacier, Lahaul & Spiti valley, Himachal Pradesh, INDIA”

(Project awarded by Department of Science and Technology, Government of India, New Delhi).

MPhil/PhD Supervised/Supervising:

1 (Supervising)

Participation in Seminars/Conferences:

Invited Talks/ Resource Person:

- i. Title: Role of Media in Crisis and Disaster Management related to Himachal Pradesh, Organising Institute: “Vartalap” organized by Press Information Bureau (PIB) Shimla, M/o I & B, GoI for improved information dissemination in rural areas, 10 August 2016.
- ii. Title: Glacial Hazards Organising Institute: “Vartalap” organized by Press Information Bureau (PIB) Shimla, M/o I & B, GoI for improved information dissemination in rural areas, 23

February 2016.

- iii. Title: "Glacier Mass Balance Methods" with Hand's on training in Chhota Shigri glacier, Lahaul & Spiti Valley, H.P. from 21st to 28th September 2013
Organising Institute: Indo-Swiss Capacity Building in Himalayan Glaciology Program organised by School of Environmental Sciences, Jawaharlal Nehru University, New Delhi.
- iv. Title: Glacier Surface Movements and Velocity, 17th & 18th October 2013
Organising Institute: Indo-Swiss Capacity Building in Himalayan Glaciology Program organised by School of Environmental Sciences, Jawaharlal Nehru University, New Delhi.

Work shop and Conferences Organised:

- i. Organising Secretary: Earth Day celebration on 22nd April, 2016. CUHP, Dharamshala , H.P.
- ii. Convenor: "National Workshop on Status of Natural Hazards in Himachal Pradesh" (NHHP-14), 06 – 08 November 2014. Central University of Himachal Pradesh, Dharamshala & Ministry of Earth Sciences, GOI, New Delhi.
- iii. Co Convenor: "National Conference on Implications of Climate Change on Himalayan Environment, 20-21 March 2014. Organized jointly by School of Earth and Environmental Sciences, Central University of Himachal Pradesh & Wadia Institute of Himalayan Geology, Dehradun.
- iv. Co-Convener: Earth Day celebration on 22nd April, 2015. CUHP, Dharamshala , H.P.

Workshop and Conferences Attended:

- i. Workshop cum Lecture series on "Recent Advancement of Stable Isotopes Applications in Hydrology/hydrogeology , Environment and Earth process by LWIA Picarro" at Jawaharlal Nehru University, New Delhi. 13th -14th June 2016.
- ii. International workshop on "Water resources impact on Agriculture , Health and Environment", School of Environmental Sciences, Jawaharlal Nehru University ,New Delhi, January 11th - 12th 2011
- iii. 3 days training course on "Hydrological Data Entry & Processing using SWDES", Western Himalayan Regional Centre, National Institute of Hydrology, Jammu, March

22nd – 24th , 2011

- iv. Training programme on Applications of Hydrochemical Modelling in Water Research, Department of Earth Sciences, Annamalai University, Annamalai Nagar , March 1st – 5th 2010
- v. National Conference on Scientific Strategies for protection and Preservation of Wetlands in India sponsored by DST, Govt. of India, and organized by School of Environmental Sciences, J.N.U New Delhi. 11th to 12th January, 2010
- vi. Snow Characterisation Work Shop (SCW) SASE, Manali, April 13th – 15th , 2009
- vii. International training course on Glacier Mass Balance Measurements Yala Glacier, Langtang Valley, NEPAL,,Sponsored by-ICSI/UNESCO-IHP /HKH-FRIEND/DST, Govt. of INDIA September 19th - 5th 2009
- viii. International conference on Coastal Environment-Vulnerability and assessment, Indo-Australian Meet on Coastal and related aspects in SES, JNU from sponsored by UGC, JNU, UNESCO, DST, MoEF, Govt of India, February 12th to 15th , 2007
- ix. Second International Conference on Ground Water for Sustainable development problems, Perspective and Challenges, J.N.U. New Delhi, INDIA. Sponsored by- UNESCO, UNICEF and DST, February 1st – 4th, 2006
- x. Certificate short term training course on Mathematical Models in Hydrochemistry: Assessment of ground water Quality and Management, J.N.U. New Delhi, INDIA, Sponsored by Department of Science & Technology. October 19th September- 5th 2005
- xi. International training course on Glacier Mass Balance Measurements New Delhi & Chhota Shigri Glacier (Himachal Pradesh), INDIA, Sponsored by- ICSI/UNESCO-IHP/HKH FRIEND/DST, Govt. of India. 2002

**Membership of Learned Societies/
Professional Bodies:**

Association of Polar Early Career Scientists (APECS)

Awards & Honours Received:

- a) UGC-NET (Environmental Sciences) June 01'
- b) CSIR - JRF/NET (Earth, Atmospheric, Planetary and Ocean Sciences) December 02'
- c) DST – Fast track Young Scientist Award, 2009

Others:

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