

Dr. Pritam Chand

Principal Investigator & National Post-Doctoral Fellow (N-PDF),
National Institute of Hydrology, Roorkee, India

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Education

- 2016 **Ph.D.** (Physical Geography with splz. in Glaciology, Geo-informatics, Geochronology) Jawaharlal Nehru University, New Delhi, India (In collaboration with Physical Research Laboratory, Deptt. of Space, Gujarat, India)
Thesis: *Glacial dynamics and landscape evolution in the glaciated basin of the Himalaya.*
- 2011 **M.Phil.** Jawaharlal Nehru University (JNU), New Delhi, India (*In First Class*)
Thesis: *Glacial response to environmental change in Ravi basin of Himachal Pradesh.*
- 2008 **Post Graduate Diploma in Geo-informatics**, Joint programme of ITC-Netherlands & Indian Institute of Remote Sensing (NRSC-ISRO), Dehradun India. (*In First Class*)
Thesis: *Quantifying urban trees using LIDAR point cloud data (awarded Distinction)*
- 2007 **Post Graduate Diploma in Remote Sensing & GIS**, Panjab University, Chandigarh, India (*In First Class*)
Thesis: *Application of remote sensing and GIS in land use/land cover mapping.*
- 2006 **Post Graduation (Geography)**, Dept. of Geography, Panjab University, Chandigarh, India (*In First Class*)
- 2004 **Graduation (Geography Honors with Math as minor)**, DAV College, Panjab University, Chandigarh India. (*Gold Medal in Geography Honors with upper second Class*)

Academic Appointments

- Oct. 2017-Continue **National Post-Doctoral fellow & Principal Investigator** (SERB, Delhi), National Institute of Hydrology, Roorkee, India.
- Jun.- Oct. 2017 **Research Associate**, Inter-University Consortium on Cryosphere and Climate Change (IUCCCC), Jawaharlal Nehru University, New Delhi, India.
- Jan. – Nov. 2014 **Visiting Doctoral Researcher in OSL Lab**, Physical Research Laboratory, Deptt. of Space, Gujarat (India)
- Jan. - May. 2013 **Assistant Professor (Guest)**, Dyal Singh College, University of Delhi, Delhi (India)
- Jul. – Dec. 2013 **Assistant Professor (Adhoc)**, Shaheed Bhagat Singh (Eve.) College, University of Delhi, Delhi (India)
- Apr. 2011- May 2012 **Assistant Professor (Guest)**, Dyal Singh College, University of Delhi, Delhi (India)

Professional Appointments

- Mar. 2016 - Jun. 2017 **Training & Capacity Building Coordinator** (Disaster Risk Reduction & Climate Change), United Nation Development Programme (UNDP), Delhi (India).
- July 2008 - Aug. 2009 **Technical Associate** (Junior Research Fellow), Forest Survey of India (Ministry of Forest, Environment and Climate Change), Dehradun, Uttarakhand, India.

Awards/Grants/Fellowships

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| 2017 | Science & Engineering Research Board (SERB), Department of Science, Delhi (India) awarded National Post-Doctoral Fellowship (Research grant of \$28000) Held at National Institute of Hydrology, Roorkee (India) with Dr. Sanjay Jain |
| 2016 | Institute of Mountain Hazard and Environment (IMHE), Chengdu-China Academy of Science (CAS)-fellowship (~\$1000) to attend advanced training in IMHE, Chengdu (China) on mountain geo-hazards |
| 2015 | Best Poster Award to our group study in XII International symposium on Antarctica Earth Science, NCOAR, Goa, India. |
| 2015 | Young Geographer Award (Second) by Indian Institute of Geographers (IIG)-Pune in IIG conference held in Guwahati, Assam, India. |
| 2015 | Institute de Réserche pour le Développement (IRD-France) Travel grants (~\$300) & Deptt. of Science and Technology, Delhi (India) registration support grant (~\$500) to attend International Glaciology Society conference in Kathmandu (Nepal) |
| 2012 | START- China Academy of Science (CAS) fellowship (~\$1500) To attend advance training on regional climate model in Institute of Atmospheric Science, Beijing, China. |
| 2009 | Queens Indian welcomes scheme fellowship (~\$1500) to attend advanced training on latest techniques in physical geography in Queens University Belfast, Northern Ireland (U.K.) |
| 2009 | University Grant Commission (NET-JRF) Fellowship (\$10000) for PhD in India. |

Research interests

Glacier-Climate modeling (Himalayan glaciers response to climate forcing)
Environmental Impact Analysis (with emphasis on Geo-morphodynamics/Geo-hazards)
Geo-informatics (Advanced Remote Sensing, GIS & Geospatial techniques)
Geochronology (Reconstruct long term paleo-climate using OSL/CRN/Tree rings)

Publications (& more than 20 invited talks/presentations in International conferences)

Peer Reviewed Articles

1. Mishra, M., [Chand, P.*](#), Pattnaik, N. et al. **(2019)**. Response of long- to short-term changes of the Puri coastline of Odisha (India) to natural and anthropogenic factors: a remote sensing and statistical assessment. **Environmental Earth Sciences**, 78, 338.
2. Prakash S., Sharma M.C., Shahnawaz, Pandey V.K., [Chand P.](#), Deswal S. **(2019)**. Mapping Glacial Geomorphology and Livelihood Resources in Urgos Watershed, Lahaul and Spiti District, Himachal Pradesh, India. **Journal of the Indian Society of Remote Sensing**, 1-11.
3. Bhambri R., [Chand P.](#), Kawishwar P., Kumar A., Gupta A. K., Verma A., Tiwari S. K. **(2019)** Revisit of the Karakoram term and its extent through historical archives. **Journal of Mountain Science**. (accepted)
4. Singh V. B., [Chand P.](#), Sharma M. C., Baruah U. D., Kumar M., Kumar N., Ramanathan A. **(2018)**. Evaluation of Meltwater Quality Using Dissolved Ions Chemistry and Multivariate Statistical Methods: A Case Study of the Manimahesh Glacier, Ravi Basin, Himachal Pradesh, India. **Proceedings of the National Academy of Sciences**, India Section A: Physical Sciences, 1-10.
5. [Chand P.*](#), Sharma M.C., Bhambri R., Juyal N. and Sangewar C.V. **(2017)**. Reconstructing the pattern of Bara Shigri Glacier fluctuation since the end of Little Ice Age (LIA), Chandra Valley, North-Western Himalaya, **Progress in Physical Geography**, 41 (5), 643-675.

6. Deswal S, Sharma M.C., Saini R., [Chand P.](#), Juyal N., Singh I., Srivastva P., Ajai and Bahuguna I.M. (2017). Late Holocene Glacier Dynamics in the Miyar Basin, Lahaul Himalaya, India, **Geosciences**, 7 (64), 1-2.
7. Sharma S., [Chand P.](#), Bisht P., Shukla A.D., Bartarya, S.K., Sundriyal Y.P., and Juyal N (2016). Factors responsible for driving the glaciation in the Sarchu Plain, eastern Zaskar Himalaya, during the late Quaternary, **Journal of Quaternary Science**, 31(5), 495–511. (*Awarded best poster in international conference, 2015*).
8. Sharma M.C and [Chand P.](#) (2016). Studies on Quaternary Glaciations in India during 2010-2016, **Proceedings of the Indian National Science Academy**, 82 (3), 869-880.
9. [Chand P.*](#) and Sharma M.C. (2016). Monitoring the frontal changes of the Shah Glacier in the Ravi basin, Himachal Himalaya (India) from 1965 to 2013, **National Academy Science Letters**, 39 (2), 109-114.
10. [Chand P.*](#) and Sharma M.C. (2015). Glacier Changes in the Ravi basin, North-Western Himalaya (India) during the last four Decades (1971-2010/13), **Global and Planetary Change**, 135, 133–147.
11. [Chand P.*](#) and Sharma. M.C (2015). Frontal changes in the Manimahesh and Tal Glaciers in the Ravi basin, Himachal Pradesh, north-western Himalaya (India), between 1971 and 2013. **International Journal of Remote Sensing**, 36, 4095–4113.
12. Ahalawat K. and [Chand P.*](#) (2012). Above-ground tree outside forest (TOF) phytomass and carbon estimation in the semi-arid region of southern Haryana: A synthesis approach of remote sensing and field data, **Journal of Earth System Science**, 121(6), 1469-1482.

Submitted peer-reviewed articles

13. [Chand P](#) et al. (As a co-author). The hazardous 2017-2019 surge and river damming by Shispare Glacier, Karakoram (**Scientific Reports**-submitted in Sept. 2019 & in review).
14. [Chand P](#) et al. (As Lead Author). Assessment of past half-century (1965-2018) recessional pattern and recent surface elevation changes of Parvati Glacier, North-Western Himalaya using remote sensing data. (**International Journal of Remote Sensing** in Review).

Peer reviewed book chapters

15. [Chand P.*](#), Sharma M. C., Baruah U. D., Deswal S., Latief S. U., Saini R., Kumar P., Prakash S., Kumar P. (2019). Shrinking Glaciers of the Himachal Himalaya: A Critical Review. In **Environmental Change in the Himalayan Region** (Cham: Springer International Publishing), 89–115.
16. [Chand P.*](#), Sharma M.C and Parsad R. N (2015). Heterogeneity in Fluctuations of Glacier with Ice-cover, Debris-cover and Proglacial-lake in the Upper Ravi Basin, Himachal Himalaya (India) During the Past Four Decades (1971-2013), In **Climate Change, Glacier Response, and Vegetation Dynamics in the Himalaya** Springer, Netherlands, 155-179.

Technical reports/proceedings/articles (without peer review process)

17. [Chand. P.*](#) (2017). Disaster Management Plan-2017 for districts of Himachal Pradesh with the assistance of United Nation Development Programme (UNDP-HPSDMA), New Delhi, India. (UNDP-HPSDMA-DDMA).
18. [Chand. P.*](#) (2013). Digital Elevation Models and Geo-morphometry for studying the glacier geomorphology and glaciations in the upper Ravi basin, Himachal Pradesh, Allied Publisher, pp 81-88. (IIG publisher).
19. Singh I. J. and [Chand P.*](#) (2011). Spatial-Temporal variability of apple orchards in response to environmental change in Pattan Valley, Himachal Pradesh using Geospatial Techniques, **International Geoinformatics Research and Development Journal**, 2 (1), 1-14. (ISSN: 0976-1241). (*Awarded one of the best Paper for the year 2011 by journal society*)

20. **Chand P.*** and Acharya. P. (2010). Shoreline change and sea level rise along the coast of Bitharkanika wildlife sanctuary, Orissa: An analytical approach of Remote sensing and Statistical Techniques, **International Journal of Geomatics and Geosciences**, 11 (3), 436-455. *(One of the highly cited paper on shoreline change by peer-reviewed articles in India).*

Paper/Research Recognitions

Awarded Best Poster Presentation (at International symposium)

Sharma S., **Chand P.**, Bisht P., Shukla A.D., Bartarya, S.K., Sundriyal Y.P., and Juyal N (2016). Factors responsible for driving the glaciation in the Sarchu Plain, eastern Zaskar Himalaya, during the late Quaternary, **Journal of Quaternary Science**, 31(5), 495–511. <http://ncaor.gov.in/news/view/199>

University (Guwahati University) highlighted featured article

<http://web.gauhati.ac.in/research/geography> & <http://web.gauhati.ac.in/research/books>

Chand P*, Sharma M. C., Baruah U. D., Deswal S., Latief S. U., Saini R., Kumar P., Prakash S., Kumar P. (2019). Shrinking Glaciers of the Himachal Himalaya: A Critical Review. In **Environmental Change in the Himalayan Region** (Cham: Springer International Publishing), 89–115.



Advanced Trainings (selected only: International/national)

2019	Water Budgeting tool for river basins using Google earth engine applications, (19 to 23 Aug, 2019) National Institute of Hydrology, Roorkee (India)
2016	Training Course on evaluation, prediction and early warning for earthquake-induced mountain hazards (22 to 28 May 2016), Institute of Mountain Hazards and Environment (IMHE), Chengdu, China.
2013	Indo- Swiss Capacity Building Programme on Himalayan Glaciology 1 st Level (01 to 27 April 2013) and 2 nd Level (20 Sep. to 23 Nov 2013) Field and Class Training (~4 months), JNU, New Delhi, coordinated by the Swiss Agency for Development Cooperation (SDC) and DST, India.
2012	Advanced Training on Regional Climate Model (07 to 24 Oct. 2012), Institute of Atmospheric Physics, China Academy of Science, Beijing, China.
2012	Workshop on Quaternary set up of Arid North-West Himalaya with the main focus on Ladakh (18 Aug. to 06 Sept. 2012), Wadia Institute of Himalayan Geology, Dehradun and DST, India
2010	Latest techniques in Physical Geography and Palaeoecology: Terrestrial and Aerial Lidar remote sensing (19 June to 10 July 2010), Queens University Belfast, School of Geography, Archaeology and Palaeoecology, Northern Ireland (U.K).
2009	Climate Change and Disaster Management (14 Sept. to 11 Oct. 2009), National Institute of Disaster Management (NIDM) and World Bank Institute (WBI Washington), New Delhi, India

Technical skills/recognitions/memberships

Skills/Technical expertise:

Geospatial Tools: ArcGIS all packages, Erdas Imagine LPS, ENVI, QGIS, eCognition, PCI Geomatica, TerraScan

Programming/Statistical Software: R, Python*, MATLAB*, SPSS, NASA Ames Stereo Pipeline (ASP) and Linux OS.

Lab Instrumentation/ Geophysical surveying: Optically stimulated luminescence (OSL) dating, Ground Penetrating Radar (GPR), dGPS, Aethalometer, Steam Drill, Total Station, Spectrometer and Laser Scanner, Stereo Microscopes Olympus.

Field Techniques: Glaciological mass balance measurements, increment borers to collect tree ring samples, sedimentary logging and experienced in environmental sampling of ice, sediment and water.

Reviewer:
(Article reviewed ~30)

Journal of Glaciology, Geomorphology, Ecological Indicators (Elsevier), Journal of Earth System Science, Climatic Change (Springer), Remote sensing (MDPI), Geocarto International, International Journal of Remote sensing, International Journal of Digital Earth (Taylor & Francis) etc. ([Publons Link](#))

Membership:

International Association of Hydrological Sciences (*LM-16518*)
Indian Society of Remote Sensing (ISRS) (*LM-5211*)
Indian Water Resources Society (IWRS) (*LM-2019-7828*)

Project Completed:
(Consultancy & Research)

APCOSMIC project on WEB-Emergency operation centre
WEBEOC (Funded by APSDMA, \$5000)

Prepared Disaster Management Plan-2017 for districts of Himachal Pradesh (Funded by UNDP-HPSDMA, \$2000)

Cyclone preparedness plan for state of Orissa (Ongoing as a Volunteer service).

Research field expeditions/ Research visits

Lahaul Himalaya
(2009-Continue)

Bara-Shigri Glacier (2012, 2014), Chhota-Shigri Glacier (2012, 2013), Batal Glacier (2013), Samudari-Tapu Glacier (2012, 2013, 2014), Menthosa Glacier (2010, 2012, 2014, 2017-2018), Miyar Glacier (2012, 2014).

Ravi Basin
(2010-2017)

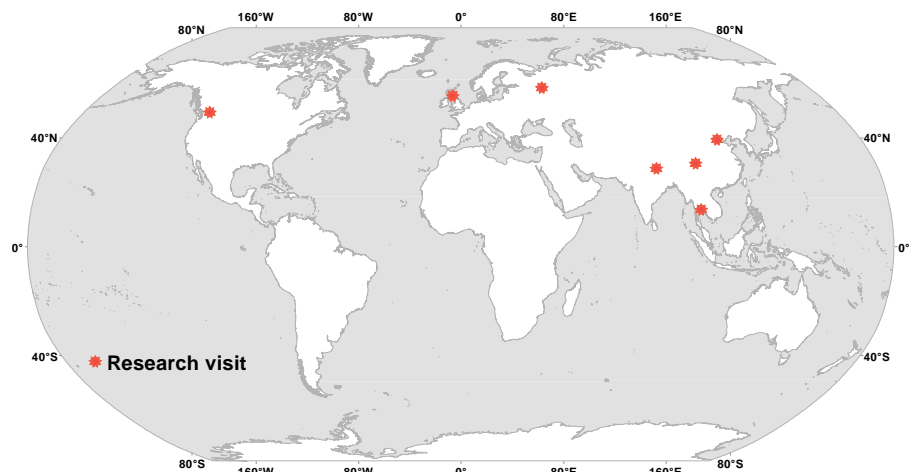
Shah Glacier (2010), Tapni Glacier (2010), Manimahesh Glacier (2013-2017), Tal glacier (2013-2014), Laihas Glacier (2013-2017), Kugti Glacier (2013-2017) and others unnamed glaciers.

Ladhak Himalaya
Eastern Karakoram

Khardung-La (2012), Chong Kumdan Glacier (2012) and many & other unnamed glaciers in Ladhak & Karakoram Himalaya.

Central/Eastern
Himalaya (2014-2017)

Gangotri Glacier (2014, 2017), Raktwan Glacier (2017), Satopanth (2012) Glacier, glaciers in Mana Valley (2012-2015).



References

Professor Milap Chand Sharma

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New Delhi (India) – 110067

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(Ph.D. Advisor)

Professor (Emeritus) Julian Orford

Emeritus Professor
School of Geography, Archaeology
and Palaeoecology (GAP)
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(Research Collaborator)

Dr. Sanjay Kumar Jain

Head & Scientist 'SG'
Water Resources System Divisions (WRSD),
National Institute of Hydrology (NIH),
Roorkee-247667 (India)

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(Post-Doctoral Collaborator)

Dr. Navin Juyal

Retired Senior Scientist
Geo-science Division, Physical research
Laboratory (PRL), Deptt. of Space,
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Head & Scientist 'SG'
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Indian Institute of Remote Sensing (IIRS)
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(P.G.Diploma Advisor)

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(Research Collaborator)