# Dr. Shailendra Kumar
# Project Scientist
# Indian Institute of Science (India)

## Personal Information


| | |
|---|---|
| DOB | India \| 23 June 1985 |
| skype-Id | shkcaos |
| Phone: | +91-8601771241, 7007312834, +91-9984898689 |
| email: | shailendrak89@gmail.com |
| Google research scholar | Shailendra Kumar |
| Research Gate | Shailendra Kumar |


## Top 5 Publications

1. **Shailendra Kumar**, Carlos Del Castro, Jose, Aldo-Moya, Daniel Martinez Castro, Shweta Srivastava, Yamina Silva Vidal, Precipitation structure during various phases the life cycle of precipitating cloud systems using geostationary satellite and space based precipitation radar over Peru **(GIScience Remote Sensing).** Corresponding Author**[IF:6.1] [Citation:1]**

2. **Shailendra Kumar**, Aldo S. Moya Alvarez, Daniel Martinez Castro, Yamina Silva Vidal Effect of the surface wind flow and topography on precipitating systems characteristic over the Center Andes and associated Amazon basin: GPM observations Atmospheric Research, Elsevier. 2019, 225 (193-208). Corresponding Author **[IF:5.2]**, https://doi.org/10.1016/j.atmosres.2019.03. **[Citation:23], 2019**

3. G.S. Bhat, **Shailendra Kumar**:
Vertical structure of cumulonimbus towers and intense convective clouds over the South Asian region during the summer monsoon season. **Journal of Geophysical Research: Atmospheres 2015**. 120 (5), 1710-1722 **[IF:3.8]**, https://doi.org/10.1002/2014JD022552, **[Citation:42], 2015**

4. **Shailendra kumar**, Yamina Silva, Aldo Moya, Daniel Martinez Castro
: Seasonal and Regional Differences in Extreme Rainfall Events and Their Contribution to the World's Precipitation: GPM Observations **(Advance in Meteorology, Special Issue, Advances in Remote Sensing to Understand Extreme Hydrological Events**. Corresponding Author **[IF:1.7]**, https://doi.org/10.1155/2019/4631609, **[Citation:14], 4631609, 2019**

5. **Shailendra Kumar**, Carlos Del Castro, Jose, Aldo-Moya, Daniel Martinez Castro, Shweta Srivastava, Yamina Silva Vidal, Precipitation structure during various phases the life cycle of precipitating cloud systems using geostationary satellite and space based precipitation radar over Peru **(GIScience Remote Sensing).** Corresponding Author**[IF:6.1] [Citation:1]**

## Research Interest

Remote sensing of clouds and Atmosphere, Radar observations, Radar retrieval algorithm, Mesoscale and cloud Modeling, Satellite meteorology, Radar precipitation retrieval, Thunderstorms, satellite radar observations of tropical cloud systems, Nature of raining cloud systems over both the oceans and land masses of the tropics, Mountains influence on precipitating cloud systems, Vertical structure of clouds, Extreme weather events and remote sensing

## Journal Reviewer

*Meteorological Applications*
*Atmospheric Research*
*Journal of Earth System Science*
*International Journal of Remote Sensing*
*Journal of Atmospheric and Solar-Terrestrial Physics*
*AAS Open Research 2020*

## Work Experience

**1. July. 2020 - Continue** Postdoctoral Research Associate, Indian Institute of Science, India.
*INCOMPASS project*
I am investigating the synoptic conditions, affecting the extreme rainfall events over Indian continent (specially near Western Ghats) using observations and numerical models.
Employer: **Dr. GS Bhat**

**2. Jan. 2020 - Jun. 2020** Postdoctoral Research Associate, French National Center for Scientific Research (CNRS) in University of Toulouse, France.
*Study of deep tropical convection with high spatial-temporal resolution using Meso-NH simulations*
I am investigating the deep tropical convection with high spatial-temporal resolution using Meso-NH simulations.
Employer: **Dr. Jean-Pierre Chaboureau, I lost my job due to COVID19**

**3. Nov. 2017 - Jan. 2020** Assistant Researcher, Geophysics Institute of Peru
*MAGNET-IGP: Strengthening the research line in physics and micro physics of the atmosphere. Atmospheric Physics and Micro-physics in the Mantaro Basin. Peru.*
Mantaro Basin located in the valley of Andes mountain and witnessed severe thunderstorms/intense rainfall events, which can affect the social and economic life of the local people. The role of wind flow at different pressure levels under the topographic influence is very important to create such intense rainfall events. The main aim of my research work is to investigate these intense rainfall events using satellite and ground based observations. In summary the main aim of my research work was
(a). To investigate the intense precipitation events over the tropics using the satellite based observations.
(b). To understand the rainfall climatology/characteristics using ground based observations, namely ground based radar and disdrometer.
(c). Comparison of drop size distribution parameters using satellite and ground based observations.
(d). To use the numerical model to understand the microphysics and dynamics of severe thunderstorms occur over the Mantaro Valley.
(e)**Field campaign over Huancayo [18 February-13 March 2019]:** An intense field campaign took place over Huancayo to investigate the role of Atmospheric variable on precipitation and atmospheric variables. Various instruments such as ground based radar, disdrometer and radiosonde are used to measure the vertical profile of temperature and humidity profiles.
(f)I am using the WRF model to investigate the effect of the PBL schemes on the surface rainfall and observed vertical profiles of temperature and humidity.
The important results from the investigation have been published in Atmospheric Research, International Journal of Remote Sensing and Advances in Meteorology and many more.
Employer: **Dr. Yamina Silva**

*4. Feb. 2017 - September 2017* Postdoctoral Research Associate, IIT Kanpur, India.

*Role of CCN on surface precipitation over IGP (INCOMPASS project)*
The WRF-ARW model to observe the relative impact of urban land use and cloud condensation nuclei on the spatial distribution of surface rainfall over Indo-Gangetic plain (IGP).
Employer: **Dr. Sachchida Nand Tripathi**

5. Feb.2016-Jan.2017 Postdoctoral Research Associate at University of Illinois, Urbana-Champaign, USA.
*Role of the vertical wind shear on cloud micro-physics (COPE project)*
We used cloud numerical model (CM1) for investigating differences in precipitation processes in convective storms observed during the Convective Precipitation Experiment (COPE) which was held in Southwest England in 2013. In particular, we investigated the different roles that warm rain, ice processes and ice multiplication processes may play in storms growing in environments with different amounts of wind shear. The important results from the numerical run has been published in Journal of Applied meteorology and Climatology (AMS).
Employer: **Dr. Sonia Lasher Trapp**

6. Jan. 2014-Jan. 2016 Senior Researcher under Continental Tropical Convergence Zone (CTCZ) project, *Govt. of India.*
Focus of CTCZ project was to understand the variability of convection/rainfall over the Indian monsoon zone. CTCZ had three major components, namely, (a) large scale aspects of the Indian monsoon, (b) Land surface processes and hydrology, and (c) clouds and aerosols. I basically worked on the properties of deep as well as shallow convective clouds over South Asia.
Employer: **Dr. G.S. Bhat**

7. Jan.2009-Dec.2015 Ph.D. from Indian Institute of Science, *India.*
The research work during my PhD includes the information regarding vertical structure of intense convective clouds, life cycle of cloud systems and shallow clouds observed from satellite radar data. I had expertise in handling large data sets. I studied various aspects of clouds, such as cumulonimbus tower and intense convective cloud at their individual length scale over India and tropical regions using TRMM data sets. TRMM snap shot offers a way to study the life cycle of clouds over tropical oceans. Intense and isolated shallow clouds are important near orographic regions and we have studied them extensively. Edward Zipser reviewed my thesis and appreciated our work.
Employer: **Dr. G.S. Bhat**

## Other selected position

**1. Jan. 2020 - Dec. 2021** Postdoctoral Research Associate, University of Genova , Italy.
*To study the spatial and temporal evolution of wind fields in thunderstorms*

**2. Nov. 2017 - October. 2018** Postdoctoral Research Associate, University of Warsaw , Poland.
*Postdoctoral Position in Absorbing Aerosol Optical and Radiative Properties*
.

## Field experiment and Training courses

2009: AWS measurement in Bay of Bengal, India

2011:Solar eclipse experiment in Rameshwaram, India

2018,2019: Atmospheric measurement Field experiment in Huancayo, Peru

2010: Attended summer school held on Fluctuations and Turbulence in the Micro-physics and Dynamics of clouds at Porquerolles (France)

2020: Attended Training school held on running the Meso-NH model at Toulouse (France)

2020: Attended Training school held on Predictability of weather and climate at Indian institute of Science (India)

## Education

| | |
|---|---|
| Jan 2016<br>6/8 India | Ph.D. in Atmospheric Science, **Indian Institute of Science**,<br>Project: Vertical structure of convective clouds using TRMM PR data<br>Advisor: Dr. G.S. Bhat |
| July 2008<br>6.73/10 India | Master of Science in Physics, **Indian Institute of Technology Roorkee**,<br>Project: Investigations on index-guided photonic crystal fiber<br>Advisor: Dr. Vipul Rastogi |
| July 2005<br>72.33% | Bachelor Degree in Physics, Mathematics and Statistics<br>**DDU Gorakhpur University**, India |

## Scholarships and Achievement

1. Mar. 2008 Qualified GATE exam in Physics
2. Sep. 2008 Qualified NET exam in Physics
3. Mar. 2006 Qualified JNU entrance exam in Physics
4. Mar. 2006 Qualified JAM exam in Physics
5. Mar. 2006 Qualified JAM exam in Geo-Physics
6. Apr. 2006 Qualified BHU entrance exam in Physics
7. Jun. 2006 Qualified JEST exam in Physics

## Languages

Hindi: Native
English: Good.

## Model and Software Skills

MATLAB, GRADS, FERRET, NCL,
Linux, Shell scripts, Fortran,
Cloud model (CM1), Weather Research and Forecasting (WRF)
and Remote sensing
Meso-NH model

## Student supervised

1. **Elver Villalobos Puma, M.Sc.**
   **Title: Study of convective storms through of observations instrumental and numeric model in the Central Andes of the Peru.**

   **Abstract**: Convective precipitations associated with storms frequently occur in the Central Andes of Peru. To study these events, statistical estimators of three-dimensional reflectivity, rainfall intensity and microphysical parameters were determined using radar information onboard in the TRMM satellites and the GPM core. As a result, it was found that deeper cloud systems occur in the Andes regions than in the Amazon-Andes transition region. Thus, the difference of the vertical average of reflectivity is around 5 dBZ between both regions. The diurnal rainfall cycle is also different, since it rains preferably at the intervals of 13-23 LST and 18-06 LST respectively. The percentages of occurrence of convective and stratiform precipitation in the areas of the Andes are 30% and 70% respectively and their cumulative contributions to rainfall are 63.3% and 36.7% respectively; however, in the Amazon-Andes transition region, the percentages of occurrence are 31% and 69% and their cumulative contributions to rain are equivalent. It is concluded that convective precipitation in the Andes areas is intensified by the orographic forcing mechanism, which strengthens the growth of hydrometeors above the height of the freezing level between 6 and 12km of height and leads to greater cumulative rainfall.

2. **Carlos Del Castillo, B.Sc.**
   Title: **Characteristics if the rainfall and DSDs variation in the Central Andes of Peru using satellite and ground based observations.**

   **Abstract**: The raindrop size distribution (DSD) parameters are the most essential parameters for estimating the precipitation in numerical modeling. Here we assessed the DSD parameters obtained from Global Precipitation Measurement (GPM) dual-frequency precipitation radar (DPR) over Huancayo during Austral

summer monsoon seasons, utilizing DSD measurements by an impact-type disdrometer and ground based radar namely MIRA35c. We also checked the consistency of single and double frequency (SF and DF) algorithm to obtain the DSD parameters. Basically specific attenuation, reflectivity and differential frequency reflectivity are estimated at Ku and Ka band and then DSD parameters are derived. We compared the derived DSD with directly observed DSD. The DSD parameters (Dm and Nw) show the difference between the ground and satellite based observations, and depend on the application of SF and DF algorithm. The derived and observed DSD over Huancayo for disdrometer and MIRA35c underestimate (overestimate) the observed Dm (Nw) in disdrometer and vice versa in MIRA35c. Derived Dm underestimates the observed Dm by 0.2 mm in disdrometer, whereas overestimate the observed Dm by 0.1 to 0.5 mm in MIRA35c depends on the rain rate (RR). GPM-DPR shows an overestimation in Dm observations in SF algorithm, for RR less than ‹ 8 mm hr-1 but match with disdrometer observation for RR greater than 8 mm hr-1. GPM-DPR observations always overestimate the Dm when compared to disdrometer in DF algorithm. GPM-DPR underestimates the Dm (except for Dm less than 2 mm hr-1 in SF algorithm) in both SF and DF algorithm compared to MIRA35c. The mean Nw observed from GPM-DPR is underestimated for SF and DF algorithm when compared to disdrometer and MIRA35c. The observed Nw is higher in MIRA35c when compared to disdrometer in SF algorithm, but quite less in DF algorithm. This could be because of small raindrops with less RR discarded from the analysis in DF algorithm. The different features observed in every year GPM-DPR measurements and over different spatial domains could lead to the differences in DSD estimation.

## Citation based on Google Scholar

*Total citation : 349*
*h index: 13*
*i-10 index: 16*

## Publications

### Published

1. G.S. Bhat, **Shailendra Kumar**:
Vertical structure of cumulonimbus towers and intense convective clouds over the South Asian region during the summer monsoon season. **Journal of Geophysical Research: Atmospheres 2015**. 120 (5), 1710-1722 **[IF:3.8]**, https://doi.org/10.1002/2014JD022552, **[Citation:42], 2015**
2. **Shailendra Kumar**:
A 10-year climatology of vertical properties of most active convective clouds over the Indian regions using TRMM PR. **Theoretical and Applied Climatology. 2017**. 127 (1-2), 429-440 **Corresponding Author [IF:3.5]**, https://doi.org/10.1007/s00704-015-1641-5, **[Citation:24], 2017**
3. **Shailendra Kumar**, G.S. Bhat:
Vertical Profiles of Radar Reflectivity Factor in Intense Convective Clouds in the Tropics. **Journal of Applied Meteorology and Climatology**. 2016. 55 (5), 1277-1286 **[IF:2.5]** https://doi.org/10.1175/JAMC-D-15-0110.1, **[Citation:24], 2016**
4. **Shailendra Kumar**:
Three dimensional characteristics of precipitating cloud systems observed during Indian summer monsoon. **Advance in space research**. 2016. 58, 1017-1032 **Corresponding Author [IF:2.2]**, https://doi.org/10.1016/j.asr.2016.05.052, **[Citation:15], 2016**
5. **Shailendra Kumar**:
Vertical characteristics of reflectivity in intense convective clouds using TRMM PR data. **Environment and Natural Resources Research**. 2017. 7 (2), 58 **Corresponding Author [IF:0.9], [Citation: 10]**
6. **Shailendra Kumar**, G.S. Bhat:
Vertical structure of orographic precipitating clouds observed over South Asia during the summer monsoon season. **Journal of Earth System Science**. 2017. 126 (8), 114 **Corresponding Author**. **[IF:1.8]**, https://doi.org/10.1007/s12040-017-0897-9, **[Citation:18], 2017**
7. **Shailendra Kumar**:
Vertical structure of precipitating shallow echoes observed from TRMM during Indian summer monsoon **Theoretical and Applied Climatology**, 133, 1051-1059, 2238-y. **Corresponding Author [IF:3.5]**, https://doi.org/10.1007/s00704-017-2238-y, **[Citation:14], 2017**
8. Chandan Sarangi, S. N. Tripathi and **Shailendra Kumar**:
Aerosol and urban land use effect on rainfall around cities in Indo Gangetic Basin from observations and cloud resolving model simulations. **Journal of Geophysical Research: Atmospheres** 2018. 123(7), pp.3645-3667 **[IF:3.8]**, https://doi.org/10.1002/2017JD028004, **[Citation:14], 2018**
9. S. L. Trapp, **Shailendra Kumar**, et al.
On Different Microphysical Pathways to Convective Rainfall. **Journal of Applied Meteorology and Climatology**. 2018 57, 2399-2417. **[IF:2.5]**,https://doi.org/10.1175/JAMC-D-18-0041.1, **[Citation:11], 2018**

10. **Shailendra Kumar**, Aldo S. Moya Alvarez, Daniel Martinez Castro, Yamina Silva Vidal
Effect of the surface wind flow and topography on precipitating systems characteristic over the Center Andes and associated Amazon basin: GPM observations Atmospheric Research, Elsevier. 2019, 225 (193-208). **Corresponding Author [IF:5.2]**, https://doi.org/10.1016/j.atmosres.2019.03.027, **[Citation:23], 2019**

11. **Shailendra kumar**, G S Bhat:
Frequency of a state of cloud systems over Tropical warm ocean **Environment Research communication, IOP Science**. **Corresponding Author [IF:Sister journal of ERL]**, **[IF:2.1]**, https://doi.org/10.1088/2515-7620/ab2bc2, **[Citation:4], 2019**

12. Aldo S. Moya-Álvarez , José Gálvez , Andrea Holguín , René Estevan , **Shailendra Kumar** , Elver Villalobos 1 , Daniel Martínez-Castro and Yamina Silva :
Extreme Rainfall Forecast with the WRF-ARW Model in the Central Andes of Peru. 9, 362, **Atmosphere**. 2018 **[IF:2.5]**, https://doi.org/10.3390/atmos9090362, **[Citation:22], 2018**

13. Aldo S. Moya-Álvarez, Daniel Martínez-Castro, **Shailendra Kumar** René Estevan, Yamina Silva :
Response of the WRF model to different resolutions in the rainfall forecast over the complex Peruvian orography. **Theoretical and Applied Climatology**. 2019 **[IF:3.5]**,https://doi.org/10.1007/s00704-019-02782-3, **[Citation:21], 137, 2993–300, 2019**

14. Elver E. Villalobos Daniel Martinez-Castro **Shailandra Kumar**, Yamina Silva, Octavio Fashe
: Estudio de tormentas convectivas sobre los Andes Centrales del Perú usando los radares PR-TRMM y KuPR-GPM. **Revista Cubana de Meteorología**. 2019 **[IF:1.0]**, http://rcm.insmet.cu/index.php/rcm/article/view/454/606, **[Citation:11], 2019**

15. **Shailendra kumar**, Yamina Silva, Aldo Moya, Daniel Martinez Castro
: Seasonal and Regional Differences in Extreme Rainfall Events and Their Contribution to the World's Precipitation: GPM Observations **(Advance in Meteorology, Special Issue, Advances in Remote Sensing to Understand Extreme Hydrological Events**. **Corresponding Author [IF:1.7]**, https://doi.org/10.1155/2019/4631609, **[Citation:14], 4631609, 2019**

16. **Shailendra Kumar**, Yamina Silva:
Vertical characteristics of radar reflectivity and DSD parameters in intense convective clouds over South East South Asia during Indian Summer monsoon: GPM observations: GPM observation. International Journal of Remote Sensing, https://doi.org/10.1080/01431161.2019.1633705 2019. **Corresponding Author [IF:3.2]**, https://doi.org/10.1080/01431161.2019.1633705, **[Citation:7], 9604-9628, 2019**

17. Jose Luis Flores-Rojas; Aldo S. Moya Alvarez, **Shailendra Kumar**, Daniel Martinez Castro, Elver Villalobos Puma, Yamina Silva Vidal,
Analysis of possible triggering mechanisms of severe thunderstorms in the tropical central Andes of Peru, Mantaro valley **(Atmosphere)**. **Corresponding Author [IF:2.6]**, https://doi.org/10.3390/atmos10060301, **[Citation:15],10(6), 301, 2019**

18. Daniel Martinez Castro,**Shailendra Kumar**, Jose Luis Flores Rojas, Jairo M. V Aldivia, Elver Puma, Aldo S. Moya Alvarez, Yamina Silva,
The impact of microphysics parameterization in the simulation of two convective rainfall events over the central Andes of Peru using WRF-ARW **Atmosphere Corresponding Author**. **[IF:2.6]**, https://doi.org/10.3390/atmos10080442, **[Citation:19],10(8), 442, 2019**

19. Aldo Moya, René Estevan Arredondo,**Shailendra Kumar**, Jose Luis Flores-Rojas, Joel J. Ticse, Daniel Martínez-Castro, Yamina Silva, Influence of PBL parameterization schemes in WRF-ARW model on short - range precipitation's forecasts in the complex orography of Peruvian Central Andes **Atmospheric Research [IF:5.2]**, https://doi.org/10.1016/j.atmosres.2019.104708, **[Citation:9], 2020**

20. Jose Luis Flores-Rojas, Joan Cuxart , Manuel Piñas-Laura, Stephany Callañaupa, Luis Suárez-Salas, **Shailendra Kumar**, Aldo S. Moya-Alvarez, Fey Yamina Silva-Vidal: The surface boundary layer and energy balance in the central Andes of Perú, Mantaro valley **Atmosphere[IF:2.6]**, https://doi.org/10.3390/atmos10120779,**[Citation:7], 10(12), 779, 2019**

21. **Shailendra Kumar**, Yamina Silva:
Distribution of hydrometeors in intense convective clouds over south America during Austral summer monsoon seasons: GPM observations. **International journal of remote sensing**. **Corresponding Author [IF:3.2]**, https://doi.org/10.1080/01431161.2019.1707899, **[Citation:4], 3677-3707, 2020**

22. **Shailendra Kumar** , Carlos del castro; Jairo M. Valdivia Prado; José Luis Flores Rojas; Stephany Magaly Callañaupa Gutierrez; Aldo S. Moya Alvarez; Daniel Martinez Castro; Yamina Silva Rainfall characteristics in the central Andes of Peru from a vertically pointed profile rain radar and in-situ field campaign **(Atmosphere). Corresponding Author [Citation:5], [IF:2.6]**

23. **Shailendra Kumar**, Carlos del castro, Aldo S. Moya-Álvarez, Jose Luis Flores-Rojas, Daniel Martínez-Castro, Yamina Silva Vidal, Effect of South American low level flow and Andes mountain on the tropical and mid latitude precipitating cloud systems: GPM observations **Theoretical and Applied Climatology). Corresponding Author[IF:3.5], [Citation:4]**

24. Aldo Moya, Daniel Martinez-Castro, , **Shailendra Kumar**, Jose luis flores rojas, René Estevan Arredondo, Miguel Saavedra-Huanca, Yamina Silva: Statistical characterization of vertical meteorological profiles obtained with the WRF-ARW model on the central Andes of Peru and its relationship with the occurrence of precipitation on the region **Atmospheric Research [IF:5.2] [Citation:2]**

25. Jose luis flores rojas,, Aldo S. Moya-Álvarez, Jairo M. Valdivia-Prado, Manuel Pinas-Laura, , **Shailendra Kumar**, Hugo Abi Karam, Elver Villalobos-Puma, Daniel Martínez-Castro, Yamina Silva: On the dynamic mechanisms of intense rainfall events in the central Andes of Peru, Mantaro valley **Atmospheric Research [IF:4.2]**
26. **Shailendra Kumar**, Carlos Del Castro, Jose, Aldo-Moya, Daniel Martinez Castro, Shweta Srivastava, Yamina Silva Vidal, Precipitation structure during various phases the life cycle of precipitating cloud systems using geostationary satellite and space based precipitation radar over Peru **(GIScience Remote Sensing)**. Corresponding Author**[IF:6.1] [Citation:1]**
27. S. Flores-Rojas, J.L., Silva, Y., Suárez-Salas, L., Estevan, R., Valdivia-Prado, J., Saavedra, M., Giraldez, L., Piñas-Laura, M., Scipión, D., Milla, M. and **Shailendra Kumar, Daniel Castro** Analysis of Extreme Meteorological Events in the Central Andes of Peru Using a Set of Specialized Instruments. **(Atmosphere, MDPI). [IF:2.5]** 2021
28. Carlos Del Castillo, **Shailendra Kumar**, Jairo M. Valdivia Prado, Aldo S. Moya-Álvarez, Jose Luis Flores-Rojas, Yamina Silva Vidal, Evaluation of GPM Dual-Frequency Precipitation Radar algorithms to estimate drop size distribution parameters, using ground-based measurement over the Central Andes of Peru **( Earth Systems and Environment, Springer)** 2021

## Under review and revision

29. **Shailendra Kumar**, Aldo S. Moya-Álvarez, Jose Luis Flores-Rojas, Daniel Martínez-Castro, Yamina Silva Vidal, Characteristics of cloud properties over South America and over the slope of Andes observed using CloudSat during Austral Summer monsoon seasons **International Journal of climatology)**. Major revision, Corresponding Author
30. Aldo S. Moya-Álvarez, Andrea Holguín Herrera, René Estevan Arredondo, Daniel Martínez-Castro, **Shailendra Kumar**, José Luis Flores, Yamina Silva. Synoptic scale patterns associated with extreme rainfall in the Central Andes of Perú. **Theoretical and Applied Climatology**
31. Jairo M. V Aldivia, **Shailendra Kumar** , Yamina Silva Vidal, Danny Scipion Simultaneous observations of Ka band profiler and GPM-DPR over tropical central Andes (12S) **(Journal of Atmospheric and oceanic Technology ).**
32. Aldo S. Moya-Álvarez, Yamina Silva, Elver Villalobos-Puma, Miguel Saavedra-Huanca, Carlos Del Castillo1, **Shailendra Kumar** : Characterization of the physical processes associated with summer rains in the western slope of the Andes (Peru), using weather radar data and numerical modeling: case studies **(Atmospheric Research ).**

## Under preparation

33. **Shailendra Kumar** , Carlos del Castro, Jairo M. V Aldivia, Yamina Silva Vidal, Sensitivity of boundary-layer variables to PBL schemes in the WRF model based on surface meteorological observations, lidar, and radiosondes during the MAGNET-campaign **( Atmospheric research).** Corresponding Author
34. Carlos del Castro,, **Shailendra Kumar** , Jairo M. V Aldivia, Yamina Silva Vidal, Characteristics of storms at the east of the Andes valley using PX-1000 radar **(Under preparation,).** Corresponding Author
35. Yamina Silva, Daniel Martinez Castro, Aldo S. Moya, Rene Steven, **Shailendra Kumar** , Jose luis flores rojas, Atmospheric physics and microphysics research project in the Central Peruvian Andes. A multilateral approach **Bulletin of the American Meteorological Society, AMS**

# Book Chapter

1. Flores-Rojas JL, Moya-Alvarez AS, **Kumar S**, Martinez-Castro D, Villalobos-Puma E, et al. Analysis of Possible Triggering Mechanisms of Severe Thunderstorms in the Tropical Central Andes of Peru, Mantaro Valley. In: **Earth and its Atmosphere**. Hyderabad, India: Vide Leaf. 2019.

# Work presentation

1. Online presentation at EGU 2020 : Atmospheric physics and microphysics research project in the Central Peruvian Andes. A multilateral approach
   Yamina Silva, Daniel Martínez-Castro, Aldo Moya-Álvarez, René Estevan, José Flores Rojas, and Shailendra Kumar
2. Online presentation at EGU 2020 : Precipitation structure during the life cycle of cloud systems over Peru using satellite based observations. A multilateral approach
   Shailenda Kumar, Yamina Silva, Carlos Del Castillo, Jose Luis Flores Rojas, Aldo Moya S. Alveraz, and Daniel Martinez Castro
3. Farewell talk : Satellite retrieval of cloud and precipitation on different length scale
   Institute of Geophysics, Lima, Peru

4. Oral presentation : Vertical structure of rain during different stages of development
   1st Congreso Peruano de Meteorologia, CONPEMET, Universidad Nacional Agraria La Molina, Peru
5. Poster : Influencia del parámetro de forma en la estimación de la precipitación en los algoritmos del GPM sobre la cuenca del Mantaro:
   1st Congreso Peruano de Meteorologia, CONPEMET, Universidad Nacional Agraria La Molina, Peru
6. Oral Presentation: Characteristics of rain over the Huancayo located in the valley of Andes
   Institute of Geophysics, Lima, Peru
7. Oral Presentation: Measurements of rainfall using satellite from space
   Institute of Geophysics, Lima, Peru.
8. Talk delivered on 'Convective properties over South America', April 2018 at Huancayo geophysical observatory, Huancayo, Peru.
9. Oral Presentation: Effect of surface wind flow and topography on the precipitating cloud systems over tropical and subtropical South America'
   Huancayo geophysical observatory, Huancayo, Peru.
10. Oral Presentation: Impact of cloud micro physical schemes on the evolution of thunderstorms
    Research Institute of Camacho, Lima, Peru.
11. Poster: An investigation of Relationship between Wind Shear and Microphysical Pathways Leading to Convective Rainfall in ICCP conference (2016), Manchester, UK
12. Poster presentation on Vertical profiles of radar reflectivity factor in deep, intense convective clouds in the tropics in NOAA satellite conference (2015), Greenbelt, USA
13. Poster presentation on Vertical profiles of radar reflectivity factor in deep, intense convective clouds in the tropics in EGU fall meeting (2015), Vienna, Austria
14. Poster presentation on Vertical structure of intense convective clouds during Indian regions during Indian summer monsoon in Fluid days (2011) Indian institute of Science, Bangalore
15. Poster presentation on Vertical structure of convective clouds during Indian regions during Indian summer monsoon in conference variability in summer monsoon (2011), Indian institute of Science, Bangalore
16. Poster presentation on Vertical structure of convective clouds during active and break phase over Western Ghats and In do Gangetic plane in summer school "Fluctuations and Turbulence in the Microphysics and Dynamics of clouds" (2010), Porquerolles (France)
17. Oral presentation on the Predictability of weather and climate conference held at Indian institute of Science (2010), Indian institute of Science, Bangalore.
18. Poster on the Convective clouds from TRMM PR at the national seminar on "Doppler Radar and Weather Surveillance (DRaWs 2010), NIOT, Chennai.
19. Poster on Cloud observed from TRMM (2009) on open day in Indian institute of Science.
20. Attended the field experiment during a solar eclipse on August 2011 near Rameshwarm.
21. Attended the atmospheric and oceanic field experiment in July-August 2009, over Bay of Bengal for 45 days

## References

1. Dr. G.S. Bhat: bhat@iisc.ac.in, Professor, CAOS, IISc, India
2. Dr. Sonia Lasher Trapp: slasher@illinois.edu, Professor, University of Illinois at Urbana-Champaign, USA, (217) 244-4250
3. Dr. Yamina Silva Vidal: fsilva@igp.gob.pe, Professor, PUCP and IGP, Peru
4. Dr. Daniel Martinez Castro: danielmartinezc53@gmail.com, Professor, Jefe del Centro de Física de la Atmósfera. Instituto de Meteorología de Cuba, Cuba

## In News

1. http://tiny.cc/t73ajz
2. https://www.gob.pe/institucion/igp/noticias/71440-estudio-sobre-la-estimacion-de-precipitacion-usando-radares-en-los-andes-del-peru-es-analizado-por-tesista-del-igp