

Curriculum Vitae: Dr. Girjesh R. Gupta

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Current Position: DST – INSPIRE Faculty

Education:

- 2011 Ph.D. Physics, Indian Institute of Science, Bangalore.
Advisor: Prof. Dipankar Banerjee, I.I.A., Bangalore.
Thesis: On the Nature of Propagating MHD Waves in the Solar Atmosphere.
- 2005 M.Sc. Physics, Indian Institute of Technology, Bombay, India.
- 2003 B.Sc. Physics (major) and Mathematics, University of Mumbai, India.

Research Experience:

DST-INSPIRE Faculty	Inter-University Centre for Astronomy & Astrophysics (IUCAA), Pune	Sept 2013–present
Post-Doctoral Fellow	Max Planck Institute for Solar System Research, Katlenburg-Lindau, Germany	Aug 2011–Aug 2013

Research Interests:

Solar magnetohydrodynamics (MHD): Role of MHD waves in the heating of solar atmosphere and acceleration of solar wind. Small-scale transient events in the solar atmosphere. MHD turbulence in the solar and astrophysical plasmas. Astrophysical spectroscopy. Solar influences on Earth's climate and space weather. Time series analysis. Imaging and spectroscopic instrumentation.

Academic Awards and Fellowships:

- Awarded the Parvez Guzdar Young Scientist Award 2017 instituted by the Institute for Plasma Research (IPR), Bhat, Gandhinagar.
- Awarded the Justice Oak Best Thesis Award for the year 2011 (in joint) by Astronomical Society of India (ASI) at 32nd-meeting of ASI, 20–22 March, 2014, IISER, Mohali.
- Awarded INSPIRE Faculty Fellowship by Department of Science & Technology (DST), Government of India, 2013 (Session-I).
- Awarded best poster presentation in 'From the Heliosphere into the Sun' conference, 2012, Physikzentrum, Bad Honnef, Germany.
- Awarded best poster presentation in the meeting of Astronomical Society of India–2009.
- Awarded Junior Research Fellowship (NET–JRF Dec–2004) conducted by Council of Scientific & Industrial Research (CSIR), India.
- Qualified National Graduate Aptitude Test in Engineering (GATE–2005) in Physics with all India rank 13th and percentile 99.61.
- Qualified National Joint Entrance Screening Test (JEST–2005) in Physical Sciences with percentile 97.25.
- Qualified State Level Eligibility Test (SLET–2004) of Maharashtra state for lectureship.
- Ranked among top 1% in National Graduate Physics Examination 2003 in Maharashtra state.

Skills:

- Familiar with Linux and Windows operating systems.
- Experienced with data reduction of AIA-HMI/SDO, EIS/Hinode, IRIS, CDS/SOHO, TRACE and other solar instruments using IDL packages.
- Multi-dimensional data analysis using several IDL packages from the Solarsoft (Solarsoft is a set of integrated software libraries, data bases, and system utilities which provide a common programming and data analysis environment for solar physics).
- Experienced in the simultaneous use of data from different instruments and spacecrafts, and with their co-alignments.

Professional Visits:

- Udaipur Solar Observatory (USO), Udaipur, India, 19–23 June, 2017.
- Institute for Plasma Research, Gandhinagar, 3–5 May, 2017.
- High Altitude Observatory, Boulder, USA, 12 September–8 October, 2016.
- Physical Research Laboratory, Ahmedabad, India, 6–8 April, 2016.
- Columbia University, NYC, USA, 2–4 April, 2013.
- Indian Institute of Astrophysics, Bangalore, India, 6–10 February, 2013.
- Inter–University Centre for Astronomy and Astrophysics, Pune, India, 2–4 February, 2013.
- Max Planck Institute for Solar System Research, Lindau, Germany, February, 2011.
- Max Planck Institute for Solar System Research, Lindau, Germany, January, 2009, under the DAAD–DST Project based Personnel exchange Programme (PPP–2007).
- Armagh observatory, North Ireland, UK, April–May, 2008, under the Royal Society–British Council joint project scheme.
- Max Planck Institute of Solar System Research, Lindau, Germany, September, 2007, under the DAAD–DST Project based Personnel exchange Programme (PPP–2007).

Miscellaneous:

- Guided Ms. Monika Gundecha for her M.Sc. thesis entitled 'Properties of Propagating Waves in the Solar Corona', Pune University, Aug 2016–May 2017.
- Reviewer of 'Research in Astronomy and Astrophysics (RAA)' Scientific Journal.
- Involved in identification of different science goals of SUIT payload on-board Aditya-L1 and its possible operation modes.
- Received IAU travel grant to attend IAU Symposium–327, Cartagena, Colombia, 10-14 October, 2016.
- Life time member of Astronomical Society of India (ASI – L 2171).
- *INSPIRE Research Grant: Study of MHD turbulence in the solar and astrophysical plasmas*, Department of Science and Technology (DST), Government of India, Amount: INR 35 Lakh, 2013–2018.
- Planned Hinode observational program (HOP 175).
- Received COSPAR travel grant to attend COSPAR-2010 meeting at Bremen, Germany.
- Attended the Heliophysics Summer School at UCAR, Boulder in July 2009 fully funded by organizers.
- Received Dept. of Science & Technology (DST), Govt. of India, travel grant to attend NSO summer school in June, 2009.
- Member of a DAAD–DST Indo-German project on wave propagation in the solar atmosphere (2007–2009).
- Attended the winter school on solar physics at Kodaikanal Observatory in Dec 2006.

Refereed Publications:

1. *On the statistical detection of propagating waves in polar coronal holes*
Gupta, G. R., O'Shea, E., Banerjee, D., Popescu, M., Doyle, J. G., 2009, **A&A**, 493, 251–257, arXiv:0902.2676
2. *Propagating waves in polar coronal holes as seen by SUMER & EIS*
Banerjee, D., Teriaca, L., **Gupta, G. R.**, Imada, S., Stenborg, G., Solanki, S., 2009, **A&A**, 499, L29–L32, arXiv:0905.1013
3. *Intensity oscillation in the corona as observed during the total Solar eclipse of March 29, 2006*
Singh, Jagdev, Hasan, S. S., **Gupta, G. R.**, Banerjee, D., Muneer, S., Raju, K. P., Bagare, S. P., Srinivasan, R., 2009, **Solar Physics**, 260, 125–134
4. *Accelerating waves in polar coronal holes as seen by EIS and SUMER*
Gupta, G. R., Banerjee, D., Teriaca, L., Imada, S., Solanki, S., 2010, **ApJ**, 718, 11–22, arXiv:1005.3453
5. *Propagating intensity disturbances in polar corona as seen from AIA/SDO*
Krishna Prasad, S., Banerjee, D., **Gupta, G. R.**, 2011, **A&A**, 528, L4, arXiv:1102.2979
6. *Spectroscopic observation of oscillations in the corona during the total Solar eclipse of July 22, 2009*
Singh, J., Hasan, S. S., **Gupta, G. R.**, Nagaraju, K., Banerjee, D., 2011, **Solar Physics**, 270, 213–233
7. *Propagating MHD waves in coronal holes*
Banerjee, D., **Gupta, G. R.**, Teriaca, L., 2011, **SSRv**, 158, 267–288, arXiv:1009.2980
8. *Spectroscopic observations of propagating disturbances in polar coronal hole: Evidence of slow magneto-acoustic waves*
Gupta, G. R., Teriaca, L., Marsch, E., Solanki, S., Banerjee, D., 2012, **A&A**, 546, A93, arXiv:1209.3524
9. *Nature of quiet-Sun oscillation using data from the Hinode, SOHO, and TRACE spacecraft*
Gupta, G. R., Srividya, S., Banerjee, D., Madjarska, M., Doyle, J. G., 2013, **Solar Physics**, 282, 67–86, arXiv:1209.5252
10. *Characteristics of polar coronal hole jets*
Chandrashekhar, K., Bemporad, A., Banerjee, D., **Gupta, G. R.**, Teriaca, L., 2014, **A&A**, 561, A104, arXiv:1310.8106
11. *The dynamical behaviour of a jet in an on-disk coronal hole observed with AIA/SDO*
Chandrashekhar, K., Morton, R. J., Banerjee, D., **Gupta, G. R.**, 2014, **A&A**, 562, A98, arXiv:1310.7853
12. *Observations of dissipation of slow magneto-acoustic waves in a polar coronal hole*
Gupta, G. R., 2014, **A&A**, 568, A96, arXiv:1407.1017
13. *Sunspot waves and triggering of homologous active region jets*
Chandra, R., **Gupta, G. R.**, Mulay, S., Tripathi, D., 2015, **MNRAS**, 446, 3741, arXiv:1410.8315
14. *Spectroscopic observations of a coronal loop: basic physical plasma parameters along the full loop length*
Gupta, G. R., Tripathi, D., Mason, H., 2015, **ApJ**, 800, 140, arXiv:1412.7428
15. *IRIS and SDO observations of recurrent explosive events*
Gupta, G. R., Tripathi, D., 2015, **ApJ**, 809, 82, arXiv:1506.05327

16. *Fan loops observed by IRIS, EIS and AIA*
Ghosh, A., Tripathi, D., **Gupta, G. R.**, Polito, V., Mason, H. E., Solanki, S. K., 2017, **ApJ**, 835, 244, arXiv:1701.01617
17. *Spectroscopic evidence of Alfvén wave damping in the off-limb solar corona*
Gupta, G. R., 2017, **ApJ**, 836, 4, arXiv:1612.09551
18. *Direct observations of different sunspot waves influenced by umbral flashes*
Sharma, A., **Gupta, G. R.**, Tripathi, D., Kashyap, V., Pathak, A., 2017, **ApJ**, In Press, arXiv:1710.08438

Submitted:

19. *Stellar flare oscillations: Evidence for oscillatory reconnection and evolution of MHD modes*
Doyle, J. G., Shetye, J., Antonova, A. E., Kolotkov, D. Y., Srivastava, A. K., Stangalini, M., **Gupta, G. R.**, Avramova, A., Mathioudakis, M., 2017, **MNRAS**, Under revision
20. *Observation and Modeling of Chromospheric Evaporation in a Coronal Loop Related to Active Region Transient Brightening*
Gupta, G. R., Sarkar, A., Tripathi, D., 2017, **ApJ**, Submitted

Conference Proceedings:

1. *Statistical detection of propagating waves in a polar coronal hole*
Gupta, G. R., O'Shea, E., Banerjee, D., Popescu, M., Doyle, J. G., 'Magnetic Coupling between the Interior and Atmosphere of the Sun', Astrophysics and Space Science Proceedings, 2010, 433-436, arXiv:0902.4333

Lectures and Seminars:

- *Role of MHD waves in the heating of solar atmosphere*, 21 June 2017, Udaipur Solar Observatory (USO), Udaipur, India.
- *Role of waves and small-scale transients in the heating of solar corona*, 4 May, 2017, IPR, Gandhinagar, India.
- *Role of waves and small-scale transients in the heating of solar corona*, 26 August, 2016, IIT Ropar, India.
- *Role of waves and small-scale transients in the heating of solar atmosphere*, 7 April, 2016, PRL, Ahmedabad, India.
- *Role of waves and small-scale transients in the heating of solar atmosphere*, 30 March, 2016, IISER Pune, India.
- *Observations of propagation and damping of waves in the solar atmosphere*, 23 March, 2016, IUCAA, Pune, India.
- *Propagating MHD waves in the solar atmosphere*, 21 January, 2016, IIT Delhi, India.
- *Observations of small-scale transient events in the solar atmosphere*, 9 April 2015, IUCAA, Pune, India.
- 3 Lectures on various aspects of solar physics in 'Solar Astrophysics Workshop' 19–20 January, 2015, Regional Science Centre, Calicut, India.
- *Damping of slow magneto-acoustic waves and plasma diagnostics in the solar corona*, 23 June, 2014, IUCAA, Pune, India.

- A Lecture in Introductory Summer School in Astronomy and Astrophysics, 14 May, 2014, IUCAA, Pune, India.
- A Lecture in Plasma Physics course of IISER, Pune, 16 April, 2014.
- *MHD Waves in the Solar Atmosphere*, 6 February, 2014, IUCAA, Pune, India.
- 3 Lectures on various aspects of solar physics in 'Solar Astronomy Workshop' 18–20 December, 2013, Tezpur University, Tezpur, India.
- *Propagating MHD waves in the solar coronal hole regions* 3 April, 2013, Dr. Savin's group, Columbia University, NYC, USA.
- *Nature of propagating disturbances in the polar coronal hole*, 8 January, 2013, Indian Institute of Astrophysics, Bangalore, India.
- *Propagating MHD waves in the solar coronal hole regions*, 4 January, 2013, IUCAA, Pune, India.
- *Spectroscopic observations of propagating disturbances in polar coronal hole*, 24 April, 2012, Solar Group Seminar, MPS, Lindau, Germany.
- *On the nature of propagating MHD waves in the solar atmosphere*, 21 June, 2011, Indian Institute of Astrophysics, Bangalore, India.
- *Propagating MHD waves in polar coronal hole regions*, 23 February, 2011, Tee seminar, Max Planck Institute of Solar System Research, Lindau, Germany.
- *On the nature of propagating MHD waves in the solar atmosphere*, 21 October, 2010, Indian Institute of Science, Bangalore, India.
- *Results from 2009 solar eclipse observations*, 9 April, 2010, In-House Scientific Meeting, IIA, Bangalore, India.
- *Accelerating waves in polar coronal holes*, 7 January, 2010, Solar Group Committee Meeting, IIA, Bangalore, India.
- *Waves in Polar coronal holes and acceleration of fast solar wind*, 17 April, 2009, In-House Scientific Meeting, IIA, Bangalore, India.

Conferences:

- Oral presentation in the *Astronomical Society of India (ASI) meeting*, 7–10 March, 2017, Jaipur, India.
- Oral presentation in the *IAU Symposium 327: Fine Structure and Dynamics of the Solar Atmosphere*, 10–14 October, 2016, Universidad de Cartagena, Colombia.
- Poster presentation in the *Hinode–10 Science Meeting*, 5–8 September, 2016, Nagoya University, Japan.
- Oral presentation in the *Dynamic Sun I.*, 22–26 February, 2016, IIT-BHU, Varanasi, India.
- Oral presentation in the *SUIT/Aditya Science meeting*, 16–17 December, 2015, USO/PRL, Udaipur, India.
- Oral presentation in the *IRIS-5 Workshop*, 26–29 October, 2015, IUCAA, Pune, India.
- Poster presentation in the *Coronal Loop Workshop VII*, 21–23 July, 2015, DAMTP, University of Cambridge, UK.
- Poster presentation in the *Astronomical Society of India (ASI) meeting*, 17–20 February, 2015, NCRA, Pune, India.
- Invited presentation in the *Indo-German Workshop on Solar Astronomy*, 17–18 November, 2014, Indian Institute of Astrophysics, Bangalore, India.

- Poster presentation in the *Coupling and Dynamics of the Solar Atmosphere, 10–14 November, 2014*, IUCAA, Pune, India.
- Oral presentation in the *Astronomical Society of India (ASI) meeting, 20–22 March, 2014*, IISER, Mohali, India.
- Oral presentation in the *NLST–Aditya-L1 Science meeting, 18–20 November, 2013*, Indian Institute of Astrophysics, Bangalore, India.
- Oral presentation in the *39th COSPAR Scientific Assembly, 14–22 July, 2012*, Mysore, India.
- Poster presentation in the *From the Heliosphere into the Sun, 31 Jan–3 Feb, 2012*, Physikzentrum Bad Honnef, Germany.
- Oral presentation in the *1st Asia-Pacific Solar Physics meeting, 21–24 March, 2011*, Indian Institute of Astrophysics, Bangalore, India.
- Poster presentation in the *Space Climate Symposium 4, 16–21 January, 2011*, Goa, India.
- Oral presentation in the *13th Young Astronomer's Meeting, 3–5 September, 2010*, Physical research Laboratory, Ahmadabad India.
- Oral presentations in the *38th COSPAR Scientific Assembly, 18–25 July, 2010*, Bremen, Germany.
- Oral presentations in the *7th Annual Meeting of AOGS, 5–9 July, 2010*, Hyderabad, India.
- Oral presentation in the *12th Young Astronomer's Meeting, 14–16 March, 2009*, Indian Institute of Technology, Kharagpur, India.
- Poster presentation in the *Meeting of Astronomical Society of India, 18–20 February, 2009*, Indian Institute of Astrophysics, Bangalore, India.
- Poster presentation in the *Magnetic Coupling between the Interior and the Atmosphere of the Sun, 2–5 December, 2008*, Indian Institute of Astrophysics, Bangalore, India.
- Attended *The RAS National Astronomy Meeting, 31 March–4 April, 2008*, Queen's University, Belfast, UK.
- Attended *National Symposium on Gamma Ray Astronomy, 23–24 November, 2007*, Indian Institute of Astrophysics, Bangalore, India.
- Attended the *Meeting of Astronomical Society of India, 7–9 February, 2007*, Osmania University, Hyderabad, India.
- Attended the *Young Astronomer's Meeting, 3–5 January, 2007*, Indian Institute of Astrophysics, Bangalore, India.