




University Faculty Details Page on DU Web-site

Title	Dr.	First Name	ASHUTOSH	Last Name	BHARDWAJ	
Designation		ASSISTANT PROFESSOR				
Department		Physics & Astrophysics				
Address	(Campus)	Room No. 189, Multistoreyed building, Dept. of Physics & Astrophysics, Univ. of Delhi				
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Web-Page						
Education						
Subject	Institution		Year	Details		
Ph.D.	Univ. of Delhi		2003	Thesis topic: Some aspects of hadron-hadron collisions at the Large Hadron Collider, CERN		
Master of Science	Univ. of Houston, USA		2008	Subject: Electrical Engineering		
M.Sc.	Univ. of Delhi		1995	Subject: Physics		
B.Sc. (H)	Univ. of Delhi		1993	Subject: Physics		
Career Profile						
Organisation / Institution		Designation	Duration	Role		
Department of Physics and Astrophysics, University of Delhi, Delhi – 7.		Assistant Professor	15 July 2010 – onwards	Teaching (M.Tech., NST & M.Sc. Physics) and research in Experimental High Energy Physics		
Department of Physics, Acharya Narendra Dev College, University of Delhi, Delhi – 19		Associate Professor	July 2008 - 14 July 2010	Teaching & member of various committees in the college		
Halliburton Energy Services, Houston, TX, USA		Sr. Scientist	February 2008 - June 2009	Research and development of new and improved products, processes and procedures for well logging		
Department of Physics, Acharya Narendra Dev College, University of Delhi, Delhi – 19		Reader	July 2005 - July 2008	Teaching & member of various committees in the college		
Department of Physics, Acharya Narendra Dev College, University of Delhi, Delhi – 19		Lecturer	September 1996 - July 2005	Teaching & member of various committees in the college		
Research Interests / Specialization						
Detector Physics & Experimental High Energy Physics						
Teaching Experience (Subjects/Courses Taught)						
July 1996 – July 2010 (Acharya Narendra Dev College, Delhi Univ.) B.Sc. (G), B.Sc.(H) Physics, B.Sc. (H) Electronics July 2010 – till date (Dept. of Physics & Astrophysics, Univ. of Delhi), M.Tech. (NST), M.Sc. (Physics)						

Honors & Awards			
<ul style="list-style-type: none"> Selected for the post of Scientific Officer C in 1995 at Bhabha Atomic Research Centre, Mumbai and worked there for a period of 6 months as Trainee Scientist. Qualified the Joint National Eligibility Test (NET) in July, 1995 and awarded Junior Research Fellowship (JRF) in Physical Science under the Council for Scientific & Industrial Research (CSIR) Fellowship Schemes. Qualified Graduate Aptitude Test in Engineering (GATE)-95 in Physics with percentile score of 91.43. Presented a paper entitled "Free Electron Laser" in paper reading contest in M.Sc. Physics in St. Stephen's College. Awarded Merit Certificate under National Scholarship Scheme of Govt. of N.C.T. of Delhi in 1988. Awarded Gold Medal and Certificate of Merit by CBSE for securing 100% marks in Mathematics of DSSE 1988. Awarded Certificate in National Mathematics Olympiad Contest-1988 and 1989 in X and XI Class. Secured Second Position in Govt. Boys Sr. Sec. School No.1, Shakti Nagar, Delhi in Delhi Secondary School Examination (D.S.S.E), 1988 of C.B.S.E. 			
Publications (LAST FIVE YEARS)			
Books / Monographs			
<u>Year of Publication</u>	<u>Title</u>	<u>Publisher</u>	<u>Co-Author</u>
2012	1-D Inversion of Tri-axial Induction logs in Anisotropic Medium	Lambert Academic Publishing	
In Indexed/ Peer Reviewed Journals			
<u>Year of Publication</u>	<u>Title</u>	<u>Journal</u>	<u>Co-Author</u>
2015	1. Combined measurement of the Higgs boson mass in pp collisions at $\sqrt{s} = 7$ and 8 TeV with the ATLAS and CMS experiments	Phys.Rev.Lett. 114 (2015) 191803	G. Aad et. al.
2014	2. Combined effect of bulk and surface damage on strip insulation properties of proton irradiated n+-p- silicon strip sensors	JINST 9, P04007	Ranjeet Dalal et. al.
2014	3. Evidence for the 125 GeV Higgs boson decaying to a pair of τ leptons	JHEP 1405 (2014) 104	Serguei Chatrchyan et al.
2013	4. Recent progress of the RD50 Collaboration – Development of radiation tolerant tracking detectors	POS, Vertex 2013, 026	A. Affolder et. al.
2013	5. The CMS tracker alignment in pp collisions	NIMA 718 (2013), 292–294	A.Bhardwaj & Kirti Ranjan
2013	6. Study of the underlying event at forward rapidity in pp collisions at $\sqrt{s} = 0.9, 2.76,$ and 7 TeV	JHEP 1304, 072.	Serguei Chatrchyan et al.
2013	7. Measurement of the $t\bar{t}$ production cross section in pp collisions at $\sqrt{s} = 7$ TeV with lepton + jets final states	Phys.Lett. B720 (2013) 83-104.	Serguei Chatrchyan et al.
2013	8. Search for new physics in events with same-sign dileptons and b jets in pp collisions at $\sqrt{s} = 8$ TeV	JHEP 1303, 037	Serguei Chatrchyan et al.
2013	9. Search for heavy narrow dilepton resonances in pp collisions at $\sqrt{s} = 7$ TeV and $\sqrt{s} = 8$ TeV	Phys.Lett. B720 (2013) 63-82.	Serguei Chatrchyan et al.
2012	10. A new boson with a mass of 125-GeV observed with the CMS experiment at the Large Hadron Collider	Science 338, 1569-1575.	Serguei Chatrchyan et al.

2011	11. "Simulation studies of the n^+n^- Si sensors having p-spray/p-stop implant for the SiD experiment"	Nucl. Instr. and Meth. A 658, 66(2011)	P. Saxena, et. al.
2010	12. "Development of multi-guard ring-equipped p^+n^- Si microstripsensors for the SiD detector at the ILC"	Semicond. Sci. Technol. 25, 105012	P Saxena, et. al.
<u>CONFERENCES</u>			
	1. "TCAD simulations of irradiated Si sensors", Ranjeet Dalal, A. Bhardwaj, G. Jain, K. Lalwani, K. Ranjan, oral presentation at 25th RD-50 Conference in CERN, Geneva, 19-21 November 2014.		
	2. "Simulations of hadron irradiation effects for Si sensors using effective bulk damage model", Ranjeet Dalal, A. Bhardwaj, G. Jain, K. Lalwani, K. Ranjan, oral presentation at 24th RD-50 Conference in Bucharest, Romania, 11-13 June 2014.		
	3. "Development of Radiation Damage Model using TCAD tools for Irradiated Silicon Sensors", R. Dalal et. al., TIPP2014: 3rd International Conference on Technology and Instrumentation in Particle Physics, 2-6 Jun 2014, Amsterdam (Netherlands), CR-2014/120.		
	4. "Simulations of Inter-Strip Capacitance and Resistance for the Design of the CMS Tracker Upgrade", Thomas Valentin Eichhorn et. al., TIPP2014: 3rd International Conference on Technology and Instrumentation in Particle Physics, 2-6 Jun 2014, Amsterdam (Netherlands), CMS CR-2014/126.		
	5. Silicon detector development for the proposed detectors of the future lepton colliders, Ranjeet Dalal, Pooja Saxena, K. Ranjan, A. Bhardwaj, R. Shivpuri, XX DAE-BRNS High Energy Physics Symposium at Santiniketan, Calcutta, India, January 13-18 2013.		
	6. "The CMS Tracker alignment in p-p collisions", A. Bhardwaj, Kirti Ranjan, 12th Pisa Meeting on Advanced Detectors, 20-26 May 2012, Biodola (Italy). CMS CR-2012/134.		
	7. "Isolation Characteristics of Silicon Sensors Using Simulation Approach", Kirti Ranjan, A. Bhardwaj, 20 th RD50 Workshop on Radiation hard semiconductor devices for very high luminosity colliders, May 30-June 01, 2012, Bari (Italy).		
	8. "Techniques of Improving Electrical Characteristics of the Si Sensors Equipped with Various Isolation Methods", Ranjeet Singh, P. Saxena, K. Ranjan, A. Bhardwaj, & R. K. Shivpuri, 14th International Workshop on Radiation Imaging Detectors (iWoRID-2012), 1-5 July 2012, Figueira da Foz, Coimbra, PORTUGAL.		
	9. "Performance studies of the p-spray/p-stop implanted Si sensors for the SiD detector", Pooja Saxena, Kirti Ranjan, A. Bhardwaj, R. K. Shivpuri, S. Bhattacharya, to be published in conference proceedings of 8 th International Conference on Radiation Effects on Semiconductor Materials Detectors & Devices, October 12-15, 2010, Florence, Italy.		
	10. "Simulation study of the n^+n^- Si sensors having p-spray/p-stop implant for the SiD detector", Pooja Saxena, Kirti Ranjan, A. Bhardwaj, R. K. Shivpuri, S. Bhattacharya, to be published in conference proceedings of the international symposium XXX Physics in Collision (PIC2010) will be held on September 1-4, 2010 at Karlsruhe Institute of Technology (KIT),		

- Germany.
11. "Parametric Inversion of Tri-axial Induction Logs in Anisotropic Media", A. Bhardwaj, Namrata , Richard Liu, Third National Conference on Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries (MATEIT) January 30-31, 2010, New Convention Centre, University of Delhi North Campus.
 12. "Inversion of tri-axial induction logs in homogeneous anisotropic media", A. Bhardwaj, S. Li, R. Liu, 2007 Graduate Research Conference, Electrical and Computer Engineering, University of Houston, Houston, TX, USA.

Articles

Conference Presentations

1. "Development and Characterization of ac-coupled Si strip detectors for Nuclear & High Energy Physics Applications", Geetika Jain, Ranjeet Dalal, Kavita Lalwani, Ashutosh Bhardwaj and Kirti Ranjan, Proceedings of the DAE Symp. on Nucl. Phys. 59 (2014).
2. "Simulation of Irradiated Si Detectors", Ranjeet Dalal, **A. Bhardwaj**, G. Jain, K. Lalwani, K. Ranjan, POS (VERTEX2014) 030.
3. "A Method to Simulate the Observed Surface Properties of Proton Irradiated Silicon Strip Sensors", Timo Hannu Tapani Peltola et. al., International Workshop on Radiation Imaging Detectors iWoRID 2014, 22-26 June 2014, Trieste – Italy.
4. "Development of Radiation Damage Model using TCAD tools for Irradiated Silicon Sensors using TCAD tools", R. Dalal et. al., 3rd International Conference on Technology and Instrumentation in Particle Physics, 2-6 Jun 2014, Amsterdam (Netherlands), POS (TIPP2014) 276.
5. "Simulations of Inter-Strip Capacitance and Resistance for the Design of the CMS Tracker Upgrade", Thomas Valentin Eichhorn et. al., 3rd International Conference on Technology and Instrumentation in Particle Physics,, 2-6 Jun 2014, Amsterdam (Netherlands), POS (TIPP2014) 279.
6. "Comparison of radiation hardness properties of p+n- & n+p- Si strip sensors using simulation approach", Ranjeet Singh, Kavita Lalwani, **Ashutosh Bhardwaj**, Kirti Ranjan, 23rd RD50 Workshop CERN, 13-15 Nov 2013.
7. "Status of Device Simulations", Ashutosh **Bhardwaj** on behalf of the CMS Device Simulation Group, *CMS Phase 2 Sensors Meeting*, 16.05.2013.
8. "Summary of Simulation Work for the CMS HPK Campaign", **Ashutosh Bhardwaj**, Kirti Ranjan, Ranjeet Singh, Ram K. Shivpuri, Simulation Working Group Meeting, 27-28.03.13.
9. "Double Electric field Peak Simulation of Irradiated Detectors Using TCAD tools", **Ashutosh Bhardwaj**, Kirti Ranjan, Ranjeet Singh, Ram K. Shivpuri, 21st RD50 Workshop CERN, 14-16 Nov 2012.
10. "The CMS Tracker alignment in p-p collisions", **A. Bhardwaj**, Kirti Ranjan, 12th Pisa Meeting on Advanced Detectors, 20-26 May 2012, Biodola (Italy).
11. "Parametric Inversion of Tri-axial Induction Logs in Anisotropic Media", **A. Bhardwaj**, Namrata , Richard Liu, Third National Conference on Mathematical Techniques: Emerging Paradigms for Electronics and IT Industries (MATEIT) January 30-31, 2010, New Convention Centre, University of Delhi North Campus.
12. "Inversion of tri-axial induction logs in homogeneous anisotropic media", **A. Bhardwaj**, S. Li, R. Liu, 2007 Graduate Research Conference, Electrical and Computer Engineering, University of Houston, Houston, TX, USA.

Total Publication Profile optional

Books

"1-D inversion of Tri-axial Induction Logs in Anisotropic Medium"

In Indexed/ Peer Reviewed Journals

Articles

CMS Note: "Simulation of Silicon Devices for the CMS Phase II Tracker Upgrade", A. Bhardwaj, Ranjeet Dalal, R. Eber, T. Peltola, T. Eichhorn, K. Lalwani, A. Messineo, M. Printz, K. Ranjan, CMS DN-14-016, 2014.

Conference Presentations

Public Service / University Service / Consulting Activity

Professional Societies Memberships
Projects (Major Grants / Collaborations)
Indo-Swiss Joint Research Program- PEP from DST: Radiation Damage Study of Silicon Sensors
Other Details