

Curriculum Vitae

Prasanta Kumar Das, Ph.D.

Associate Professor

Department of Physics

BITS Pilani, Goa Campus

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Areas of research interest:

Phenomenological investigation of the Standard Model and beyond the Standard Model physics. Specific interests are (i) Dark Matter, Dark Energy and their implication, (ii) Aspects of brane world gravity, noncommutative geometry (ii) Higgs boson and all that matters at colliders (iv) Supernovae and Neutron star cooling in the light of New Physics and (iii) Rare B meson decays and New Physics.

General Information

Dr. Prasanta Kumar Das is associated with the Physics department of BITS-Pilani, Goa Campus from July, 2007. He obtained his Ph.D. degree from Indian Institute of Technology, Kanpur in 2003 working under the supervision of Prof. Pankaj Jain (IIT Kanpur) in the area of High Energy Physics Phenomenology. During his Ph.D. he collaborated intensely with Prof. Sreerup Raychaudhuri (IITK, currently in TIFR, Mumbai) and Prof. Uma Mahanta (now deceased) from HRI, Allahabad.

After submitting his thesis in March 2002, he joined HRI Allahabad as a postdoctoral fellow and he was there for the period 2002-2004, then moved to CYCU, Taiwan (2004-2005) as a postdoctoral fellow. He joined in Institute of Mathematical Science (IMSc), Chennai in August 2005 and was there till July 2007 before he joined the Physics department of BITS Pilani, Goa campus. In between, he was a visiting fellow at the University of Kansas, USA during April 2003 – August, 2003.

He is a high energy physicist and his main research interest is in the phenomenological investigation in beyond the Standard Model physics in particularly, Dark Matter, space-time noncommutativity and its signature in high energy colliders and Supernovae physics.

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Besides teaching the core courses at the UG and PG level, he has taught advanced courses like Astronomy & Astrophysics, Particle Physics, Quantum Field Theory and General Relativity and Cosmology.

Currently he is the Associate Dean, Academic Research Division and member of the Internal Quality Assurance Council (IQAC) (University-wide). He is also the Chairperson of the Higher Degree Counseling Committee, BITS Pilani Goa Campus..

Personal Data:

- + **Name:** PRASANTA KUMAR DAS
- + **Date of Birth:** April 12, 1971
- + **Nationality:** Indian
- + **Sex:** Male
- + **Marital status:** Married
- + **Address for communications:**
B-314, Department of Physics
BITS-Pilani, Goa Campus
NH-17 B, Zuarinagar, Goa-403726, India
Phone: +91-832-2580448(O)
Email: pdas@goa.bits-pilani.ac.in
Website: <http://universe.bits-pilani.ac.in/goa/pdas/Profile>

Education:

- B.Sc : University of Calcutta, 1990 - 1993
- M.Sc : University of Calcutta, 1993 – 1995
- Ph.D : Indian Institute of Technology, Kanpur, 1996-2002

PhD Thesis Title: *Some phenomenological aspects of low scale quantum gravity*

Thesis Supervisor:

Prof. Pankaj Jain (Supervisor)
Professor, Department of Physics
Indian Institute of Technology, Kanpur
Kanpur - 208016, UP, India.

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A substantial part of my thesis was done in collaboration with Prof. Sreerup Raychaudhuri (IITK, currently in TIFR, Mumbai) and Prof. Uma Mahanta (now deceased) from HRI, Allahabad.

Work Experiences:

- Associate Professor in the Physics department, BITS Pilani, Goa campus: February 2015 - till date.
- Assistant Professor in the Physics department, BITS Pilani, Goa campus: July 2007 - January 2015.
- Postdoctoral fellow at Institute of Mathematical Science(IMSc), Chennai: August 2005 - July 2007.
- Postdoctoral fellow at CYCU, Chung-Li, Taiwan: August 2004 - July 2005.
- Visiting fellow at the University of Kansas during the period April 2003 - August 2003.
- Postdoctoral fellow at HRI, Allahabad: March 2002 - July 2004

Administrative Experience:

- Associate Dean, Academic Research Division(ARD) of BITS Pilani Goa campus from January 2014 –
- Member of Internal Quality Assurance Committee (IQAC) .
- Chairperson, Higher Degree Counseling Committee, BITS Pilani, K K Birla Goa Campus
- Member of the Standing Committee for Review of Proposals under "Additional Competitive Research Grant"
- Member of the Standing Committee for Review of the "Memorandum of Understanding".
- Resident Warden of AH-7 from 2009 to 2013.

Professional accomplishments:

- Reviewer of the International Journal [European Physical Journal C](#) (Area: Particles & Nuclear Physics: IF:4.912)
- Reviewer of Extra Mural Research Fund of DST, SERB, Government of India.
- Member of the Executive Council of the [Square Kilometer Array \(SKA\) -India consortium\(click\)](#)

Workshop/Conference/School organized at BITS Pilani K K Birla Goa campus:

1. The physics department of BITS Pilani, Goa campus Goa organized the "[SERC Main school in Theoretical High Energy Physics\(THEP\), 2014](#)". The school was from 20th December,2014 to 8th January,2015. I was the **Director** of the Main school.

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2. The physics department of BITS Pilani, Goa campus organized the "**Planning committee meeting of the DST, SERB School on THEP**" on 13th October, 2014. I was the **Convenor** of that meeting.

3. The physics department of BITS Pilani, K K Birla Goa campus has organized the **DSTPAC-2013** during the period April 22nd - 23rd, 2013. I was the **Convenor** of that meeting.

4. The physics department of BITS Pilani, Goa campus organized the workshop **HIGGSTOP-2013**. The workshop was held from 25th February to 27th February, 2013. I was the **Convenor** of that workshop and member of the National Organizing Committee.

5. The physics department of BITS Pilani Goa campus organized the "**SERC Preparatory school in Theoretical High Energy Physics(THEP), 2010**". The school was from 20th Oct. to 15th Nov. 2010. Details of the school are available [here](#). I was the **Director(Joint)** of that school.

6. The department of Physics organized the "**GROUP MONITORING WORKSHOP ON FAST TRACK YOUNG SCIENTIST PROJECT IN PHYSICAL AND MATHEMATICAL SCIENCE**" during 21-22 september,2009. Details of the workshop are available [here](#). I was the **Convenor** of that workshop.

Assignment handled in Department / Institute

- Delivered talks at the IAPT(Indian Association for Physics Teachers) workshop on *Statistical Mechanics* held in BITS-Goa from March 22-23, 2013.
- Delivered talks at the IAPT(Indian Association for Physics Teachers) workshop on *Quantum Mechanics* held in BITS-Goa from March 12-13, 2011
- Took part in developing contents for the PhD courses e.g. General Relativity & Cosmology, Nuclear & Particle Physics etc.
- Took part in the upgradation (developing lab manual, ppt presentation, setting lab equipments etc) of the Physics Laboratory.
- ITW (Intensive Teaching Workshop) resource person, 2011.
- ACB mentor of BITS undergraduate students, 2008-2010.
- Co-ordinator, physics department webpage, 2013 -.
- Faculty coordinator, Practice School at Technical Training Center(TTC), Chittaranjan Locomotive Works(CLW), Chittaranjan, West Bengal, Summer, 2008.

Experiences related to cultural activities

- President, Campus Durga Puja committee, 2011.

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Teaching Experience:

From August 2007 I am teaching in the Physics department of BITS Pilani Goa campus. I have taught the following courses:

- Quantum Mechanics II,
- Quantum Physics & Application
- Physics II (Classical Electrodynamics)
- Modern Physics
- Particle Physics
- Quantum Field Theory
- Astronomy & Astrophysics
- General Theory of Relativity and Cosmology
- Classical Mechanics
- Statistical Mechanics
- Mathematics III (Differential Equations and its application)
- Physics Laboratory I (*earlier it was known as Measurement Technique Lab*)

The semester-wise breakup is as follows:

Year	Semester	Course No.	Level	Subject
2007 - 2008	I	MATHGC241	Core	Mathematics III
	I	MTGC123	Core	MT Lab 1
2007 – 2008	II	PHYGC421	Elective	Quantum Mechanics 2
	II	PHYGC132	Core	Physics II
2008 – 2009	I	MATHGC241	Core	Mathematics III
	I	PHYGC221	Core	Modern Physics
2008 – 2009	II	PHYC132	Core	Physics II
	II	PHYC362	Core	Nuclear & Particle Physics
	II	BITSC382	Reading	GTR & Cosmology
2009 – 2010	I	TAC211	Core	MT Lab 1

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	I	PHYC221	Core	Modern Physics
2009 – 2010	II	PHYC132	Core	Physics II
	II	PHYC362	Core	Nuclear & Particle Physics
2010 – 2011	I	PHYC212	Core	Classical
	I	TAC211	Core	Mechanics MT Lab 1
2010 – 2011	II	PHYC362	Core	Nuclear & Particle Physics
	II	PHYC471	Elective	Astrophysics Classical
2011 – 2012	I	PHYC212	Core	Mechanics
	I	TAC211	Core	MT Lab 1
2011 – 2012	II	PHYC471	Elective	Astronomy & Astrophysics
	II	PHYC362	Core	Particle Physics
2012 – 2013	I	TAC211	Core	MT Lab 1
	I	PHYC212 & PHYF211	Core	Classical Mechanics
2012 – 2013	II	PHYC312	Core	Statistical Mech.
	II	PHYC415	Elective	GTR & Cosmology
2013 – 2014	I	PHYF111	Core	MOW
	I	PHYF110	Core	Physics Laboratory
	I	PHYC412	Elective	QFT: an intro.
2013 – 2014	II	PHY F215	Elective	Astronomy & Astrophysics
	II	MATH F112	Core	Mathematics II
2014 – 2015	I	PHY G514	Elective	QM & Application
	I	PHY F110	Core	Phys. Lab 1
2014 – 2015	II	PHY F215	Elective	Astronomy & Astrophysics
	II	PHY F413	Elective	Particle Physics
2015 – 2016	I	PHY F312	Core	Statistical Mech.

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	I	PHY F415	Elective	GTR & Cosmology
	I	PHY F110	Core	Phys. Lab. 1
2015 – 2016	II	PHY F423	Elective	Special Topics in Statistical Mech.
	II	PHYF344	Core	Adv. Phys. Lab 2
2016 – 2017	I	PHY F312	Core	Statistical Mech.
	I	PHYF423	Elective	Special Topics in Statistical Mech.
	I	PHY F110	Core	Phys. Lab. 1
2016 - 2017	II	PHY F215	Elective	Astronomy & Astrophysics
	II	PHY G514	Elective	Special Topics in Statistical Mech.
QFT : Quantum Field Theory	GTR: General Theory of Relativity	MT : Measurement Technique	MOW : Mechanics, Oscillations and Waves	

Areas of Research:

I am a high energy physicist and my primary interest is in the area of High Energy Physics Phenomenology, Astrophysics and Cosmology.

Major areas of research interest:

- Dark matter and Dark Energy and Supernovae physics
- Higgs phenomenology, Extra dimension(s), Noncommutative geometry
- Rare decays of B meson and New Physics.
- Mathematical Biology

Awards, Scholarships and Fellowships:

- Qualified the GATE-95 conducted jointly by all the Indian Institute of Technologies in India to obtain fellowship for doing PhD at IIT Kanpur.
- Selected for a fellowship under the Young Student Program of Abdus-Salam International Center for Theoretical Physics(ASICTP),Trieste, Italy in 1998 (while doing

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PhD)that allows me to visit ASICTP, Italy for a period of 4 months for an interaction with people over there.

- Selected for Post-Doctoral fellowship in Institute of Physics, Bhubaneswar, Orissa, India. in 2002. Declined.
- Selected for Post-Doctoral fellowship in Harish Chandra Research Institute, Allahabad, India in 2002. Joined.
- Selected for Post-Doctoral fellowship(under NSF grant) under Prof. K. C. Yang, Chung-Yuan Christian University, Chung-Li, Taiwan under the Research Grant of National Science Council, R.O.C in 2004. Joined.
- Selected for Post-Doctoral fellowship in Institute of Mathematical Science, Chennai, India in 2005. Joined.

Sponsored Research Projects:

Projects ongoing:

Project 1

Title: Signature of space-time noncommutativity in high energy collider

Principal Investigator(PI): Dr. Prasanta Kumar Das

Objective: To look for the signatures of space-time noncommutativity at high energy electron-positron and large hadron proton-proton colliders

Funding agency: SERB, Govt. of India

Project JRF: **Position is closed**

Project 2

Title: Dark Matter, Dark Energy and Cosmic Acceleration of the Universe in Modified Gravity.

Principal Investigator(PI): Dr. Gauranga Charan Samanta (Dept. of Mathematics)

Co-PI: Dr. Prasanta Kumar Das (Dept. of Physics)

Objective: To study the effect of dark matter, dark energy on the acceleration of the Universe.

Funding agency: CSIR, Govt. of India

Project JRF: **Position is open** (see the [JRF advertisement, if interested](#))

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Projects (completed):

Project-1 (completed on January 2016)

Title: Probing new physics at high energy colliders

Principal Investigator(PI): Dr. Prasanta Kumar Das

Objective: To probe the beyond the standard model physics signatures, in particularly the extra dimension, noncommutative geometry at high energy via the high energy scattering and decay processes

Funding agency: CSIR, Govt. of India ([Website](#))

Project JRF: **Mr. Atanu Guha** (PhD student) is working in this project problem.

Project fellow: Dr. Ravi Manohar(PhD, IIT Mumbai) worked in this project as a Research Associate for one year in the first one year.

Project publication: [Paper-1](#), [Paper-2](#), [Paper-3](#)

Project 2 (completed on October,2015)

Title: Aspects of some astrophysical systems like supernovae and neutron stars in the light of new physics

Principal Investigator(PI): Dr. Prasanta Kumar Das

Co-PI: Dr. Tarun Kumar Jha and Dr. Chandradew Sharma

Objective: To see how anomaly observed in the supernovae SN1987A and Neutron star cooling can be explained in the light of New Physics, in particularly Large and Warped extra dimensional models. To understand the rich structure of the dense nuclear matter of the Neutron star is also another important part of this project.

Funding agency: DAE, BRNS, Govt. of India ([Website](#))

JRF scholar: **Mr. J. Selvaganapathy** (PhD student) is working in this project problem.

Output: [Paper-1](#),[Paper-2](#),[Paper-3](#), [Paper-4](#)

Project 3 (completed on 2011)

Title: Radion contribution to various FCNC processes in B meson decay

Principal Investigator(PI): Dr. Prasanta Kumar Das

Objective: To investigate the role of light HyperCP (X0) boson, the brane-world radion in a class of rare B meson decays, particularly a class of semi-leptonic, leptonic and non-leptonic decays.

Funding agency: SERB, DST (Fast Track), Govt. of India

Publications: [Paper-1](#), [Paper-2](#), [Paper-3](#)

Project 4(completed on 2012)

Title: Probing Space-Time Noncommutativity at High Energy Experiments

Principal Investigator(PI): Dr. Prasanta Kumar Das

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Objective: To investigate the nature of noncommutative space-time at high energy via scattering and decay processes

Funding agency: SEED Grant, BITS-Pilani, India

Publications: [Paper-1](#), [Paper-2](#)

PhD Thesis Supervised/supervising:

1. **Mr. J. Selvaganapathy**, a PhD student of the department, is working under my supervision. The title of his Ph.D. thesis proposal is "Some phenomenological aspects of beyond the standard model physics" . His thesis work is in the final stage.
2. **Mr. Atanu Guha**, a PhD student of the department, is working under my supervision. The title of his Ph.D. thesis proposal is "Astrophysical and collider signatures of dark matter" . His thesis work is in progress.

Project JRF:

1. **Mr. Tanmoy Poddar** is going to join in my DST-SERB Project as a JRF in July, 2017.

Research Associate:

Dr. Ravi Manohar (PhD, IIT Mumbai) is currently working as a Research Associate in the CSIR project. His project topic is: *Generalized Parton Distribution (GPD) function and its applications in the Higgs production at the Large Hadron Collider.*

B.E. Projects/First Degree Thesis Supervised:

1. "Some Aspects of Inflationary Cosmology and Inflaton as a Dark Matter Candidate", Shashank Gupta(2012B5A8538G), 2017.[On-campus Thesis]
2. "Using H-I science in Cosmology", C. N Gandevikar (2015B5A4327G), 2017
3. "The world as viewed by Hubble Space Telescope", Madhur K Dodeja(2014B5A3669G), 2017
4. "Astrobiology", B. R. Prathamesh V(2014B5A1679G), 2017
5. "Pulsar Science", Prateek Nagvani(2014B5A4706G), 2017
6. "A SOP in Pulsar Science", Deshpande C Anand(2014B5A4557G), 2017
7. "Supernovae and its Remnants", Samyak Jain (2014B5A4790G), 2017
8. "Physics of Antennae and Image Processing", Akshit Goel (2013B5A3827G), 2017

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9. "Dark matter and their detection", Akanksha Patnaik.
10. "Few aspects of dark matter", Apurba Bose.
11. *Dark matter in Astrophysics*, Bhargav Joshi.
12. *Inflation in Brans-Dicke theory*, Vishal Pathak.
13. *Few aspects of gravity*, Nesar S.R (2008B5PS041G).
14. *Neutrino Astrophysics: Cosmogenic Neutrinos and their Implications*, Anupam Mitra(2006B5A7345G), 2010.
15. *Study of Solar Neutrino Oscillations*, Kartik Goyal (2007B5A7520G), 2010.
16. *Atmospheric Neutrino oscillation*, Sarvpriye Khetrapal (2007B5A7491G), 2010.
17. *Few aspects of Neutrino Oscillation*, Dinesh Vernekar (2007B5A3404G), 2010.
18. *Higgs boson phenomenology*, Abhishodh P (2006B5A3444G),2010.
19. *Heavy Quark-Pair production in Linear Collider*, Anupam Mitra(2006B5A7345G), 2010.
20. *Phases In Quantum Mechanics*, Mohamed Rameez(2007A4B5292G),2009.
21. *Supernovae and their classification*, Devina Sial(2007A1PS416G),2009.

Publication in International journals

Total Number:

Publications (in peer-reviewed journal) = **30**, Preprints = **7**, Books/Chapter of a book) = **2**, Conference Proceedings = **5**.

Average citations per paper: **9**. Highest no. of citations (of a single paper): **100**. Journal Impact factor(average): **4+**

Selected publications(Journal info:Journal name vol:page, year of publication) (Journal citation resource: [SLAC-Spires](#)):

1) **Drell-Yan as an avenue to test noncommutative standard model at large hadron collider**
Selvaganapathy J, **Prasanta Kumar Das** (BITS Pilani, K K Birla Goa Campus) and Partha Konar (PRL,Ahmedabad)

Journal Ref.: [Phys.Rev.D 93:116003, 2016](#). Impact factor: 4.643. No. of citation: 2
Publisher: American Physical Society(APS)

2) **TeV Scale Implications of Non Commutative Space time in Laboratory Frame with Polarized Beams.**

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Sumit K. Garg (IISc,Bangalore), T. Shreecharan (Hyderabad U.), **P.K. Das** (BITS-Pilani,K K Birla Goa campus), N.G. Deshpande (Oregon U., USA),G. Rajasekaran (Chennai Math. Inst.),

Journal Ref.: [Journal of High Energy Physics 1107:024,2011](#). Impact factor: **5.618**. No. of citation:[12](#). Publisher: Springer

3) Unparticle effects in Supernovae cooling.

Prasanta Kumar Das (BITS Pilani, K K Birla Goa campus)

Journal Ref.: [Phys.Rev.D76:123012,2007](#). Impact factor: **4.643**. No. of citation: [58](#) (topcite 50+)

Publisher: American Physical Society(APS)

4) Data for polarization in charmless B ---> phi K*: A Signal for new physics?

Prasanta Kumar Das, Kwei-Chou Yang, (Taiwan, Chung Yuan Christian U.)

Journal Ref.: [Phys.Rev.D71:094002,2005](#).

Impact factor: **4.643**. No. of citation:[100](#) (topcite: 50+)

Publisher: American Physical Society(APS)

5) On distinguishing radion from Higgs bosons.

Prasanta Kumar Das (Taiwan, CYCU) , Santosh Kumar Rai, Sreerup Raychaudhuri, (IIT Kanpur) .

Journal Ref.: [Phys.Lett.B618:221-228,2005](#). Impact factor: **5.083**. No. of citation: [12](#)

Publisher: Elsevier (Science Direct)

6) Testable muon g-2 contribution due to a light stabilized radion in the Randall-Sundrum model.

Prasanta Kumar Das and Uma Mahanta, (Harish-Chandra Res. Inst.)

Journal Ref.: [Nucl.Phys.B644:395-400,2002](#). Impact factor: **4.327** No. of citation: [9](#)

Publisher: Elsevier (Science Direct)

7) HERA constraint on warped quantum gravity.

Prasanta Kumar Das, Sreerup Raychaudhuri, Saswati Sarkar, (Indian Inst. Tech., Kanpur) .

Journal Ref.: [JHEP 0007:050,2000](#). Impact factor: **5.618**. No. of citation: [9](#)

Publisher: Springer

Complete List of Publication:

Publications: 4 research publications (i.e. Ref. No. 20,21,24 and 25 in the list below) are with **Mr. Abhishodh P (2006B5A3444G)** and **Mr. Anupam Mitra (2006B5A7345G)** who were the undergraduate students of BITS Pilani K K Birla Goa campus. Currently, they are doing Ph.D.

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[2017-2018]

30) "q-deformed statistics and the role of a light fermionic dark matter in SN1987A cooling"

Atanu Guha, Selvaganapathy J and Prasanta Kumar Das, BITS-Pilani, K K Birla Goa Campus,

Journal ref. [Phys.Rev.D 95:015001, 2017](#). Impact factor: 4.643. No. of citation: 2

[2015-2016]

29) Drell-Yan as an avenue to test noncommutative standard model at large hadron collider

Selvaganapathy J, Prasanta Kumar Das (BITS Pilani, K K Birla Goa Campus) and Partha

Konar(PRL,Ahmedabad)

Journal Ref.: [Phys.Rev.D 93:116003, 2016](#). Impact factor: 4.643. No. of citation: 2

28) Search for associated production of Higgs boson with Z boson in the NCSM at linear colliders

J Selvaganapathy, Prasanta Kumar Das(BITS-Pilani, K K Birla Goa campus) and Partha Konar

(PRL,Ahmedabad)

Journal Ref.: [Int. Journal of Modern Physics\(IJMP\)A 30:1550159, 2015](#). Impact factor: **1.7**. No. of citation: 3

[2013-2014]

27) Probing space-time noncommutativity in the top Quark Pair Production at e+e- collider

Ravi S Manohar, J Selvaganapathy and [Prasanta Kumar Das \(BITS Pilani, K K Birla Gmpus\)](#)

Journal Ref.: [IJMPA 29:1450156, 2014](#). Impact factor: **1.7**. No. of citation: 1

26) Tsallis statistics and the role of a light stabilized radion in supernovae cooling

[Prasanta Kumar Das](#), J Selvaganapathy, C. Sharma, T.K.Jha and V Sunilkumar (BITS-Pilani, K K Birla Goa Campus)

Journal Ref.: [IJMPA 28:1350152, 2013](#). Impact factor: **1.7**. No. of citation: 2.

25) 126 GeV Higgs boson pair production at the Linear Collider in the NC space-time

[Prasanta Kumar Das](#)(BITS-Pilani, Goa), [Abhishodh Prakash](#) (SUNY, Stonybrook, USA).

Journal Ref.: [IJMPA 28:1350004, 2013](#). Impact factor: **1.7**. No. of citation: 3

[2011-2012]

24) Laboratory frame analysis of $e^+ e^- \rightarrow \mu^+ \mu^-$ scattering in the NC Standard Model.

[Prasanta Kumar Das](#)(BITS-Pilani, Goa), [Abhishodh Prakash](#) (SUNY, Stonybrook, USA).

Journal Ref.: [IJMPA, 27:1250141, 2012](#). Impact factor: **1.7**. No. of citation: 1

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23) The inclusive semi-leptonic $B_{\text{bar}} \rightarrow X_s \mu^+ \mu^-$ and leptonic $\{\overline{B}_s\} \rightarrow \mu^+ \mu^-$ decays in the presence of a light stabilized radion in Randall-Sundrum model

[Prasanta Kumar Das](#) (BITS-Pilani, K K Birla Goa campus)

Journal Ref.: **Mod. Phys. Lett. A27:1250043, 2012.** Impact factor: 1.198.

22) TeV Scale Implications of Noncommutative Space time in Laboratory Frame with Polarized Beams.

[Sumit K. Garg](#) (IISc,Bangalore), [T. Shreecharan](#) (Hyderabad U.), [P.K. Das](#) (BITS-Pilani, K K Birla Goa campus), [N.G. Deshpande](#) (Oregon U., USA),[G. Rajasekaran](#) (Chennai Math. Inst.),

Journal Ref.: **JHEP 1107:024,2011.** Impact factor: **6.019.** No. of citation: [12](#)

21) Neutral Higgs boson pair production at the LC in the Noncommutative Standard Model

[Prasanta Kumar Das](#), [Abhishodh Prakash](#), [Anupam Mitra](#), (BITS-Pilani,K K Birla Goa campus)

Journal Ref.: **Phys.Rev.D83:056002,2011.** Impact factor: **4.643.** No. of citation: [9](#)

[2009-2010]

20) $e^+ e^- \rightarrow \mu^+ \mu^-$ scattering in the Noncommutative standard model

[Abhishodh Prakash](#), [Anupam Mitra](#), [Prasanta Kumar Das](#), (BITS Pilani, K K Birla Goa campus)

Journal Ref.: **Phys.Rev. D82: 055020, 2010.**Impact factor: **4.643.** No. of citation: [16](#)

19) Implication of the HyperCP boson X_0 (214-MeV) in the FCNC processes.

[Prasanta Kumar Das](#) (Birla Inst. Tech. Sci-Pilani, K K Birla Goa campus)

Journal Ref.: **Phys.Rev.D80:034017,2009.** Impact factor: **4.643.** No. of citation: [1](#)

[2007-2008]

18) Plasmon Annihilation into Kaluza-Klein Graviton: New Astrophysical Constraints on Large Extra Dimensions?

[Prasanta Kumar Das](#) (BITS-Pilani, K K Birla Goa campus) , [V.H.Satheesh Kumar](#), [P.K. Suresh](#), (Hyderabad U.)

Journal Ref.: **Phys.Rev.D78:063011,2008.** Impact factor: **4.643.**

17) Moller and Bhaba scattering in the noncommutative standard model.

[P.K. Das](#) (BITS-Pilani, K K Birla Goacampus) , [N.G. Deshpande](#),(Oregon U. USA), [G. Rajasekaran](#), (IMSc) .

Journal Ref.: **Phys.Rev.D77:035010,2008.** Impact factor: **4.643.** No. of citation: [23](#)

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16) Unparticle effects in Supernovae cooling.

[Prasanta Kumar Das](#) (Birla Inst. Tech. Sci., K K Birla Goa campus)

Journal Ref.: **Phys.Rev.D76:123012,2007**. Impact factor: **4.643**. No. of citation: [58](#)

TOPCITE(spines) = 50+

15) Finding gamma from the eta-eta-prime mixing within QCD factorization.

[Prasanta Kumar Das](#) (IMSc, Chennai)

Journal Ref.: **Int.J.Mod.Phys.A22:2493-2511,2007**. Impact factor: **1.7**

[2006-2007]

14) Muon anomaly and a lower bound on Higgs mass due to a light stabilized radion in the Randall-Sundrum model.

[P.K.. Das](#) (Harish-Chandra Res. Inst.)

Published in **Int.J.Mod.Phys.A21:5205-5220,2006**. Impact factor: **1.7**

13) anti-B(s) \rightarrow $\mu^+ \mu^-$ decay in the Randall-Sundrum model.

[Basudha Misra](#), [Jyoti P. Saha](#), [Prasanta Kr Das](#)(IMSc,Chennai)

Journal Ref.: **Phys.Rev.D74:074011,2006**. Impact factor: **4.643**

[2004-2005]

12) Neutral Z boson pair production due to radion resonance in the Randall-Sundrum model: Prospects at the CERN LHC.

[Prasanta Kumar Das](#) (Taiwan, Chung Yuan Christian U.)

Journal Ref.: **Phys.Rev.D72:055009,2005**.

Impact factor: **4.643**

11) Data for polarization in charmless B \rightarrow ϕK^* : A Signal for new physics?

[Prasanta Kumar Das](#), [Kwei-Chou Yang](#), (Taiwan, Chung Yuan Christian U.)

Journal Ref.: **Phys.Rev.D71:094002,2005**. Impact factor: **4.643**

TOPCITE = 100 (topcite 50+)

10) On distinguishing radions from Higgs bosons.

[Prasanta Kr. Das](#) (Taiwan, CYCU,Taiwan) , [Santosh Kr. Rai](#), [Sreerup Raychaudhuri](#), (IIT Kanpur)

Journal Ref.: **Phys.Lett.B618:221-228,2005**.

Impact factor: **5.083**

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9) **The Effect of a light radion on the triviality bound on Higgs mass.**

Uma Mahanta, [Prasanta Kr. Das](#) (Harish-Chandra Res. Inst.)

Journal Ref.: **Int.J.Mod.Phys.A20:1089-1093,2005**. Impact factor: **1.7**

8) **Implications of a light radion on beta(l_α) and beta(g(t)) and a lower bound on radion vev.**

[P.K. Das](#), [U. Mahanta](#), (Harish-Chandra Res. Inst.)

Journal Ref.: **Mod.Phys.Lett.A19:1855-1861,2004**. Impact factor: **1.338**

[2002-2003]

7) **Testable muon g-2 contribution due to a light stabilized radion in the Randall-Sundrum model.**

[Prasanta Kr. Das](#) and [Uma Mahanta](#), (Harish-Chandra Res. Inst.)

Journal Ref.: **Nucl.Phys.B644:395-400,2002**. Impact factor: **4.327**

6) **rho parameter constraints on radion phenomenology and a lower bound on Higgs mass.**

[Prasanta Kr. Das](#) (IIT Kanpur) , [Uma Mahanta](#), (Harish-Chandra Res. Inst.)

Journal Ref.: **Phys.Lett.B528:253-258,2002**. Impact factor: **5.083**

[2000-2001]

5) **Implication of a light radion on the RG evolution of Higgs self coupling in the Randall-Sundrum model.**

[Uma Mahanta](#), (Harish-Chandra Res. Inst.) [Prasanta Kumar Das](#) (IIT Kanpur)

Journal Ref.: **Phys.Lett.B520:307-312,2001**. Impact factor: **5.083**

4) **Cosmic birefringence within the framework of heterotic string theory.**

[Prasanta Kr. Das](#), [Pankaj Jain](#), [Sudipta Mukherji](#), (Indian Inst. Tech., Kanpur)

Journal Ref.: **Int.J.Mod.Phys.A16:4011-4024,2001**. Impact factor: **1.7**

3) **HERA constraint on warped quantum gravity.**

[Prasanta Das](#), [Sreerup Raychaudhuri](#), [Saswati Sarkar](#), (Indian Inst. Tech., Kanpur)

Journal Ref.: **JHEP 0007:050,2000**. Impact factor: **6.019**

2) **Dynamically gauge symmetry breaking in (SU(3))(L) x (U(1))(x) extension of the standard model.**

[Prasanta Kr. Das](#), [Pankaj Jain](#), (Indian Inst. Tech., Kanpur)

Journal Ref.: **Phys.Rev.D62:075001,2000**. Impact factor: **4.643**

Curriculum Vitae

[1998-1999]

1) **Limits on exotic quarks in the SU(3) x U(1) extension of the standard model from SUSY search data.**

[Prashanta Kr. Das](#), [Pankaj Jain](#) (Indian Inst. Tech., Kanpur), [Douglas W. McKay](#) (Kansas U.).

Published in **Phys.Rev. D59 (1999) 055011**. Impact factor: **4.643**

Conference proceedings:

5) **Supernovae as Probes of Extra Dimensions.**

[V.H. Satheesh Kumar](#), [P.K. Suresh](#), (Hyderabad U.) , [P.K. Das](#).

Published in **AIP Conf.Proc.939:258-262,2007**. Cited 2 times

4) **Working group report: Flavor physics and model building.**

[M.K. Parida et al. 2006. 12pp.](#)

Published in *Pramana* 67:849-860,2006.

3) **Working group report: Low energy and flavour physics.**

[A. Dighe et al. 2004. 7pp.](#)

Published in *Pramana* 63:1359-1365,2004.

2) **Summary of the activities of the Working Group I on high energy and collider physics.**

[Naba K. Mondal et al. Oct 2004. 34pp.](#)

Presented at 8th Workshop on High-Energy Physics Phenomenology (WHEPP 8), Bombay, India, 5-16 Jan 2004.

Published in *Pramana* 63:1331-1354,2004.

1) **Working group report: Neutrino and astroparticle physics.**

[Srubabati Goswami et al. Sep 2004.](#)

Published in *Pramana* 63:1391-1406,2004.

Preprints :

7) **Determination of gamma from the eta - eta-prime mixing within QCD factorization**

[Prasanta Kumar Das](#) ([IMSc, Chennai](#)) . IMSC-PHYSICS-08-2005, Aug 2005. 16pp.

e-Print: [hep-ph/0508292](#)

Curriculum Vitae

6) **Muon anomalous magnetic moment and a lower bound on Higgs mass due to stabilized radion in the Randall-Sundrum model**

[Prasanta Kumar Das](#), ([Harish-Chandra Res. Inst.](#)) . Jul 2004. 13pp.

e-Print: [hep-ph/0407041](#)

5) **Higgs pair production due to a radion resonance in Randall-Sundrum model: Prospects at the large hadron collider**

[Prasanta Kumar Das](#), [Biswarup Mukhopadhyaya](#), ([Harish-Chandra Res. Inst.](#)) . Mar 2003. 15pp.

e-Print: [hep-ph/0303135](#).

4) **Tadpole diagrams due to KK modes of graviton and radion do not contribute to the rho parameter**

[Prasanta Kr. Das](#), [Uma Mahanta](#), ([Harish-Chandra Res. Inst.](#)) . Jan 2002. 7pp.

e-Print: [hep-ph/0201260](#) .

3) **Torsion constraints from the recent precision measurement of the muon anomaly**

[Prasanta Kr. Das](#), [Uma Mahanta](#), ([Harish-Chandra Res. Inst.](#)) , [Sreerup Raychaudhuri](#), ([Indian Inst. Tech., Kanpur](#)) . Nov 2002. 10pp. e-Print: [hep-ph/0211137](#)

2) **Constraints on radion VEV from the beta functions for top Yukawa coupling and Higgs selfcoupling in the Randall-Sundrum model**

[Prasanta Kr. Das](#), ([Indian Inst. Tech., Kanpur](#)) , [Uma Mahanta](#), ([Harish-Chandra Res. Inst.](#)) . Oct 2001. 21pp.

e-Print: [hep-ph/0110309](#).

1) **Rho parameter constraints on models with large compact dimensions.**

[Prasanta Kr. Das](#), [Sreerup Raychaudhuri](#), ([Indian Inst. Tech., Kanpur](#)) . IITK-HEP-99-53, Jul 1999. 23pp.

e-Print: [hep-ph/9908205](#).

Books/chapter of a book

Total number of books/chapter of a book = 2

1. Title: Some phenomenological aspects of low scale quantum gravity

Author: [Prasanta Kumar Das](#)

ISBN No.: **78-3-8443-1194-5**

Publisher:**LAP LAMBERT Academic Publishing GmbH & Co. Germany**

2. Anomalous magnetic moment of the muon in a composite model.

[PrasantaKr.Das](#),[Santosh Kumar Rai](#), [SreerupRaychaudhuri](#), (IIT, Kanpur) .**Feb 2001. 10pp. In**

***Caparthy, J. (ed.): Muons* 35-44.**

Curriculum Vitae

As a Ph.D. Thesis Examiner

Recently, as an External Examiner I have examined a Ph.D. Thesis titled "*Mass Determination Methods At Large Hadron Collider*".

As a Journal reviewer:

1) Title: *On Multi-component Erlang Distribution and Levy Distribution of Transverse Momentum Spectra in High Energy Collisions*

Authors: Hua-Rong Wei, Ya-Hui Chen, Li-Na Gao and Fu-Hu Liu, Institute of Theoretical Physics, Shanxi University, Taiyuan, Shanxi 030006, China.

Submitted to the journal "**Advances in High Energy Physics**", [Hindawi Publishing Corporation](#).

Review process completed in September, 2013.

2) Title: *Higgs production in $e-e+$ collisions as a probe of noncommutativity*

Authors: M. Ghasemkhani, R. Goldouzian, H. Khanpour, M. Khatiri Yanehsari, M. Mohammadi Najafabadi

Submitted to the journal "**Progress of Theoretical and Experimental Physics**"

Review process completed in July, 2014.

Workshop/Conference/School (attended):

National:

1. Recently I have attended the IQAC workshop on Quality Assurance in Higher Education in VIT, Chennai (21st April – 22nd April, 2017).

2. Recently I have participated in the Indo-US workshop on Dark Matter and Dark Energy which was held in the University of Hyderabad during the period 16th-18th November, 2016.

3. I have participated in the International workshop on the High Energy Physics Phenomenology(WHEPP XIV) that was held in IIT Kanpur during the period 4th-13th December, 2015.

4. I have attended the Top-Higgs workshop(the first workshop in India after the announcement of the Higgs discovery by the LHC@CERN on 4th July, 2012) which was held at CHEP, IISC, Bangalore. The workshop was from 24th August to 26th August, 2012.

5. I have attended the International workshop on the High Energy Physics Phenomenology(WHEPP XII) that was held in Mahabaleswar, Pune. The workshop was from 2nd Jan, 2012 to 15th Jan, 2012.

6. Workshop on High Energy Physics Phenomenology(WHEPP-9), IOP, Orissa, India (2006).

Curriculum Vitae

7. Workshop on High Energy Physics Phenomenology(WHEPP-8), IITB, Mumbai, India (2004).
8. 6th ACFA workshop on Linear Collider, TIFR, Mumbai, India (2003).
9. SERC school on High Energy Physics, HRI, Allahabad, India (2001).
10. Fourteenth DAE High Energy Physics Symposium, Hyderabad, India (2000).
11. SERC school on High Energy Physics, SINP, Calcutta, India (2000).

International:

1. Mini-workshop on Flavour Physics, Academia Sinica, Taipei, Taiwan Dec. (2005).
2. [Summer School on Cosmology and Astroparticle Physics, ASICTP, Italy](#) (28th June - 10th July, 2004).
3. Summer School on Astroparticle Physics and Cosmology, ASICTP, Italy (17th June - 5th July, 2002).
4. [Conference on Physics of Extra Dimensions, ASICTP, Italy](#) (3rd July - 6th July, 2000).
5. Summer School on Particle Physics and Cosmology, ASICTP, Italy (29th Jun - 17th July 1998).

Invited Lectures/Seminars:

International:

1. *B to phi K* polarization puzzle and New Physics.*
Department of Physics, CYCU, Taiwan, R.O.C.(2005).
2. *Radion signatures at the Large Hadron Collider*
Department of Physics, University of Vienna, Austria (July, 2004)
3. *The implication of a light radion in models of Warped Quantum Gravity*
Department of Physics and Astronomy, University of Kansas, USA (2003).
4. *Radion Phenomenology in models of warped geometry*
Department of Physics, Syracuse University, USA, (2003).
5. *Radion phenomenology in Brane World scenerio*
Universit de Montral, Qubec, Canada H3C 3J7 (2003)

National:

1. *Fermionic Dark Matter and SN1987A cooling*, PRL Ahmedabad March 2017.
2. *SN1987A cooling and Dark Matter*, IIT Indore March 2017.
3. *Associated Higgs production in the noncommutative Standard Model.* IISER Kolkata, January 2016.

Curriculum Vitae

4. *NC phenomenology at the Linear Collider*, ISI Kolkata June 2015.
 5. Searching New Physics at Linear Collider” at IIT Indore October 2014.
 6. *Moller and Bhabha scatterings in the noncommutative Standard Model* at IISER,Kolkata, 17th June,2009.
 7. *Some phenomenological studies in the noncommutative Standard Model*.
ISI, Kolkata, June,2009.
 8. *Higgs quartic coupling in the presence of a light stabilized radion and a lower bound on radion vev*. SNBose National Centre for Basic Sciences, SaltLake, Kolkata-700098, 21st Oct, 2006 (under the TPSC programme).
 9. *Bs decay in the Randall-Sundrum model*.
Indian Statistical Institute,Kolkata-700035,India, 26th Oct, 2006.
 10. *Bs decay in the Randall-Sundrum model*
Saha Institute of Nuclear Physics, BidhanNagar,Kolkata-700064, 27th Oct, 2006.
 11. *Phenomenology of a light stabilized radion*.
Department of Physics, Rajabazar Science College, University of Calcutta, Kolkata-700009, 31st Oct, 2006.
 12. *Bs decay in the Randall-Sundrum model*.
Institute of Physics, Bhubaneswar, Orissa, INDIA - 751005, 2nd Nov, 2006.
 13. *Higgs quartic coupling () in the presence of a light stabilized radion and a lower bound on radion vev* .
Department of Physics, University of Madras, Chennai, Sept, 2006.
 14. *Muon anomaly in the brane world scenario*.
Institute of Mathematical Sciences(IMSc), C.I.T Campus, Chennai in May, 2006.
 15. *Probing radion at Large Hadron Collider, A saga for New Physics*.
Department of Physics, IIT Chennai, TN in Feb, 2006.
 16. *The Higgs mass and the triviality bound in the Randall-Sundrum model*.
Department of Physics, IIT, Guwahati, Assam in 2005.
 17. *The Higgs mass and the triviality bound in the Randall-Sundrum model*.
Department of Physics, IIT Roorkee, Uttaranchal in 2005.
 18. *Triviality bound on Higgs mass in models of warped quantum gravity*.
Talk given at IISc, CTS (Bangalore) in 2004.
 19. *Triviality bound on Higgs mass in the Randall-Sundrum model*.
Talk given at IMSc (Chennai) as a TPSC speaker in 2004.
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