



**Arya Vidyapeeth College**  
আর্য্য বিদ্যাপীঠ মহাবিদ্যালয়



## Personal profile

**Name of the Faculty: Dr. Pijush Kanti Dhar**

**Designation: Associate Professor**

Personal Information Date of Birth: 02-06-1961

Gender: Male

Nationality: Indian

**Address for correspondence:**

Department of Physics,

Arya Vidyapeeth College

Guwahati – 781 016

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Dist: Kamrup (M)

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Contact no.: 09954134011

Date of joining the present service: 23-10-1987

Academic Qualification PhD

Teaching Experience

In UG level: 33 Years (Around)

In PG level: No.

Academic distinction i) 1<sup>st</sup> Class 2<sup>nd</sup> in M.Sc..

ii) 1<sup>st</sup> Class V<sup>th</sup> in B.Sc (PHYSICS Hons)



Research Experience Date of obtaining / PhD Degree: 01-04-2011, Gauhati University  
Title of the PhD thesis:  
“DEEP INELASTIC NEUTRINO SCATTERING AND ULTRA HIGH ENERGY NEUTRINO-NUCLEON INTERACTION”  
Length of research experience: 20 Years  
Specialization (Area of interest): High Energy Particle Physics  
Research Guidance (PhD guideship): Recognized as Ph.D. Research Guide of Gauhati University from the date of effect 25-09-13, Gauhati University.

Publications **No. Of Research paper published: 13**

**Selected Papers:**

- i) Analytical Evaluation of the Neutrino- Nucleon Interaction Cross-Sections at Ultrahigh Energy, **Pijush Kanti Dhar** and D.K.Choudhury, ISRN High Energy Physics, Volume 2014, Article ID 462824, 5 pages.
- ii) An improved analysis of Chicago- Columbia-Fermilab-Rochester neutrino data with Singlet Dokshitzer- Gribov-Lipatov-Altarelli-Parisi equation at low  $x$ , **Pijush Kanti Dhar** and D.K.Choudhury, Indian J. Phys 87 (10), 1041 (2013).
- iii) An Improved Analysis of the  $x$  - Distribution of a Non-singlet Structure Function, **Pijush Kanti Dhar** and D.K.Choudhury, Journal of the Korean Physical Society, 63 ( 8), 1537 (2013).
- iv) Cross Sections of the Neutrino- Nucleon Interaction at Ultra High Energy, **Pijush Kanti Dhar** and D.K.Choudhury, Journal of the Korean Physical Society, 63 ( 8), 1537 (2013).
- v)  $x$ -distribution of Non-singlet structure function at low and high  $x$ , D.K.Choudhury and **Pijush Kanti Dhar**, Indian J. Phys 83(12), 1013 (2009)
- vi) Non-singlet structure function at low and high  $x$  in the next-to-leading order and CCFR neutrino data, D.K.Choudhury and Pijush Kanti Dhar, Indian J. Phys 81(8), 819 (2007).

Papers

presented in Seminar/  
Conference

- i) Latest developments in High Energy Physics and Phenomenology, IIT, Guwahati, International Workshop of High Energy Physics and Phenomenology (WHEPP) XIII in December 1-10, 2019.
- ii) Workshop on experimental High Energy Physics, IIT, Guwahati from 18th-22nd December, 2018, International Workshop.

- iii) GIAN (Global Initiative of Academic Networks) workshop on Electroweak Symmetry Breaking, Flavour Physics and BSM, IIT, Guwahati from 18th-22nd December, 2017, International Workshop.
- iv) Workshop on Collider Physics: Events, Analysis and QCD, IIT, Guwahati from 27th-31st May, 2017, participated in Theory as well as hands-on sessions, International Workshop.
- v) Recent developments of High Energy Physics and Phenomenology, IIT, Kanpur, International Workshop of High Energy Physics and Phenomenology (WHEPP) at IIT, Kanpur in December, 2015.
- vi) Recent trends of High Energy Physics and Phenomenology, TIFR, Mumbai, International Workshop of High Energy Physics and Phenomenology (WHEPP) XIII in Blue Lily Beach Resort, Puri, Odhisha, India in December 12-21, 2013
- vii) Recent topics of High Energy Physics, IIT, Guwahati, February, 2014, National workshop.
- viii) National Workshop on Recent Trends in Astronomy and Astrophysics, Department of Physics, Tezpur University, Participated in the National Workshop on Recent Trends in Astronomy and Astrophysics (arranged as a part of celebration of International Year of Astronomy) held in October, 2009 at the Department of Physics, Tezpur University (Sponsored by: IUCAA, PUNE).
- ix) National Workshop on Simulation & Data Analysis Techniques, Department of Physics, Gauhati University, Participated in the National Workshop on Simulation & Data Analysis Techniques for High Energy Cosmic Ray Experiments held in March, 2009 at the Department of Physics, Gauhati University.
- x) Bounds on UHE neutrino cross-section. Gauhati University, Guwahati, National Conference on Cosmology (NC-HEPC 2013) held on 12th to 14th February, 2013.
- xi) Solution of Singlet DGLAP equation in next-to-leading order by Lagrange's method at low  $x$  limit, Shantiniketan University, Bolpur, XX DAE-BRNS Symposium on High Energy Physics, during 13-18th January, 2013 (National Conference).
- xii) Some characteristics of UHE neutrino-nucleon interaction, Mizoram University, Aizawl, Mizoram, 8th National Conference of the Physics Academy of North East (PANE) held on 17th to 19th December, 2012 (National Conference).
- xiii) Upper bounds of UHE neutrino-nucleon cross-section, Gurucharan

College, Silchar on February 11 and 12, 2011, National Seminar on Contemporary Trends of Research in Physical Sciences (National Conference)

xiv) Advanced analysis of UHE neutrino-nucleon cross-section, LNMIT, Jaipur, Rajasthan, Homi Bhabha Centenary XIX DAE-BRNS Symposium on High Energy Physics 2010. (National Conference)

xv) UHE neutrino interaction, Department of Physics, Manipur University, Imphal, 7th National Conference of the Physics Academy of North East (PANE), Recent Developments in Physics. (on 5th and 6th October, 2010) (National Conference)

xvi) Most General Solution of DGLAP equation at low and high  $x$ , Department of Mathematics, Gauhati University, Recent Trends in Mathematics and its Applications (NCRTMA-09) held in september, 2009 (National Conference) (National Conference).

xvii) t-evolution of Singlet structure function at low  $x$ , Tripura University, Agartala, Tripura, India, under the auspices of Physics Academy of North East (PANE), 6th National Conference on Physics Research in North East held on April, 2009 (National Conference)

Acted as  
Resource  
person/  
chaired  
technical  
Session

**Invited Lectures in the career:**

- i) Delivered an Invited talk at IIIT and NIIT, Hamirpur campus, Himachal Pradesh campus on January, 2019 on the topic 'Ice Cube Neutrino Observatory'
- ii) Delivered an Invited talk at Assam University, Diphu campus (AUDC) on 28th February, 2018 on the topic 'UHE neutrino in the ICECUBE and the Physics underground.'
- iii) Delivered an Invited talk on 'BSM Physics associated with rare top quark decay', at IIT, Bombay in July, 2015.
- iv) Delivered an Invited talk on 'Anomalous coupling of Top quark to probe new Physics effects' at IISER, Kolkata in May, 2015.

**Chairperson in the Conferences/ Symposia:**

- i) Chairperson, Biennial Conference of Physics academy of North East (PANE), Assam University, Diphu campus AUDC) on 28th February, 2018.
- ii) Chairperson. Four Technical sessions in the Workshop on Collider Physics: Events, Analysis and QCD, held in IIT, Guwahati from 27th-31<sup>st</sup> May, 2017.
- iii) Chairperson. 1st Technical session on 'Higgs Physics, XXI DAE-BRNS High Energy Physics Symposium held at IIT, Guwahati from 8-12 December,

2014.

iv) Chairperson. 1st and 2nd Technical session on neutrino Physics. XX DAEBRNS Symposium on High Energy Physics, held at Shantiniketan University, Bolpur, West Bengal during 13-18th January, 2013.

Linkage with other institution (research collaboration)

**Collaboration :**

i) Have a good collaboration with people in National and International level. Engaged in collaborative Research work with collaborators in IITG, IIIT (UNA) and PRL.

Membership in reputed national/international agency

**Professional Memberships :**

- i) Life member of Indian Physical Society.
- ii) Life member of Physics Academy of North East (PANE)
- iii) Life member of Assam Physical Society

Corporate Social responsibility

- i) Publicity Secretary of the Physics Academy of North-East (PANE). (<https://hep.iitg.ac.in/pane/public/organization.php>) ( From 2009 till today)
- ii) Member, Governing Body, Arya Vidyapeeth College for the session 2010-11.
- iii) Member, “Purchase Committee for Laboratory Equipments” of the college, 2016.
- iv) Convenor, Foundation Day celebration, Arya Vidyapeeth College in 2014.
- v) Member, Sub-Committee constituted for preparation of NAAC inspection.
- vi) Member, Executive Committee of Golden Jubilee Celebration of A. V. College in the year 2009.
- vii) General Secretary, Arya Vidyapeeth College Science Society (From 1988 to 1994).

Any other  
remarks

**Visiting Scientist :**

- i) Visiting Scientist, SAHA INSTITUTE OF NUCLEAR PHYSICS (SINP), Kolkata. (July, 2010, July, 2011)
- ii) Visiting Scientist, PRL, Ahmedabad. (July, 2012)
- iii) Visiting Scientist, SAHA INSTITUTE OF NUCLEAR PHYSICS, Kolkata (July, 2013)
- iv) Visiting Scientist, Harishchandra Research Institute (HRI), Allahabad. (July, 2014)
- v) Visiting Scientist, IISER, Kolkata (May, 2015)
- vi) Visiting Scientist, IIT, Bombay (October, 2015)
- vii) Visiting Scientist, PRL, Ahmedabad (July, 2016)
- viii) Visiting Scientist, IIIT, Hamirpur campus, Himachal Pradesh. (2019)

**Research Interest :**

- i) QCD Phenomenology, Neutrino Physics, Collider Physics, Physics beyond the standard model, Dark matter.

**Research Experience :**

- i) PhD from Gauhati University.
- ii) Post-PhD research for seven years.
- iii) Total Research experience of 20 years.

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