SPECTRUM

Academic News Letter

Issue 2

May - Aug , 2011

Theory Division, SINP

Here is the 2nd issue of the SPECTRUM of Academic Activities of our Theory Division covering the 2nd quarter of 2011.

We thank All who helped in bringing out this issue, gave valuable feedbacks and contributed to make it more interesting.

Let's keep up our:

S- Sincerity

P- Progress

E- Enthusiasm

C- Creativity

T- Tenacity

R- Rigor

U- Usefulness

M- Mystery-Magic-Magnificence

News/Views/Reports

I. Top of the World

... by Anjan Kundu

Here is the list of Top 50 Universities in 2010 (in Physical Sciences). The selection made by Times Higher Education (UK) is based on several parameters like Teaching, International mix, Industry income, Research, Citations etc.

Rank	Institution	Country / Region	Score
1	Harvard University	United States	93.5
2	California Institute of Technology	United States	92.4
3	Massachusetts Institute of Technology	United States	91.7
4	Princeton University	United States	90.3
5	Stanford University	United States	90.1
6	University of California Berkeley	United States	88.5
7	University of Chicago	United States	86.1
8	University of Cambridge	United Kingdom	84.4
9	Yale University	United States	84.1
10	University of Oxford	United Kingdom	82.2
	Swiss Federal Institute of Technology Zurich	Switzerland	
	Cornell University	United States	
	Imperial College London	United Kingdom	
	University of California Los Angeles	United States	
	University of Washington	United States	
	University of California Santa Barbara	United States	
	Columbia University	United States	
	University of Munich	Germany	
	University of Tokyo	Japan	
	Northwestern University	United States	
	University of Michigan	United States	

University of Göttingen	Germany
Ecole Polytechnique	France
University of Illinois - Urbana	United States
University of Toronto	Canada
Pohang University of Science and Technology	Korea
University of Edinburgh	United Kingdom
University of Melbourne	Australia
Ruprecht Karl University of Heidelberg	Germany
University of Colorado	United States
Boston University	United States

As we see USA takes 8 out of top 10 places. It is encouraging that two Asian University come within top 26 in Physical Sciences.

The Indian Universities are however nowhere ! Without restriction of the subjects the picture is even bleaker. This year (2011) in Symonds (QS) World University Rankings not a single Indian university has made it to the Top 200 Universities. IIT Bombay (187), the only Indian varsity to find itself in the Top 200 in 2010, has dropped 38 places to rank 225. Similarly, IIT Delhi and IIT Madras, which ranked 202 and 262 respectively in 2010, fell to 218 and 281.
The remaining Indian Universities including IIT Kanpur, IIT Kharagpur, IIT Roorkee, IIT Guwahati, University of Delhi, University of Calcutta, University of Pune and University of Mumbai do not feature even in the Top 300 World University Rankings.

Let's see now the list of Top Asian Universities in 2010 (without restriction of the subjects).

	Institution	Country / Region	Score
1	University of Hong Kong	Hong Kong	79.2
2	University of Tokyo	Japan	75.6
3	Pohang University of Science and Technology	Republic of Korea	75.1
4	National University of Singapore	Singapore	72.9
5	Peking University	China	70.7
6	University of Science and Technology	Hong Kong	69.0
7	University of Science and Technology of China	China	66.0
8	Kyoto University	Japan	64.6
9	Tsinghua University	China	64.2
10	Korea Adv Inst Science and Technology	Republic of Korea	59.5

National Tsing Hua University	Taiwan
Seoul National University	Republic of Korea
Hong Kong Baptist University	Hong Kong
Tokyo Institute of Technology	Japan
Bilkent University	Turkey
National Taiwan University	Taiwan
Nanjing University	China
Osaka University	Japan
Tohoku University	Japan
Hong Kong Polytechnic University	Hong Kong
National Sun Yat-Sen University	Taiwan
Sun Yat-sen University	China
Nanyang Technological University	Singapore
National Chiao Tung University	Taiwan
Middle East Technical University	Turkey
Yonsei University	Republic of Korea
Zhejiang University	China

Again Indian Universities are nowhere near!

II. LHC news - Fresh from 'Lepton-Photon 2011'

(**Contributed by** Gautam Bhattacharyya, **Plenary Speaker of International Conference Lepton-Photon 2011)**

Where is the *Higgs* boson?

In the recently concluded International Conference `Lepton-Photon 2011', held in TIFR, Mumbai (one of the two biggest conferences in High Energy Physics, which for the first time came to India), about 400 physicists from all over the world assembled to hear the latest news on the Higgs boson, which was the central topic of the Conference. Aleandro Nisati (INFN/CERN), Vivek Sharma (UC, San Diego) and Marco Verzocchi (Fermilab) summarized the status of the Higgs boson searches on behalf of the ATLAS (LHC), CMS (LHC) and Tevatron (Fermilab) experiments, respectively. So far there is no evidence for this elusive particle, but as a result of combination of data from LEP, Tevatron and LHC experiments the window for the Standard Model Higgs boson has really narrowed down. The Standard Model Higgs should be heavier than 114 GeV (otherwise LEP-2 would have caught it) and lighter than 145 GeV (which is roughly the ATLAS and CMS exclusion limit at 95% CL from data analyzed so far). Since there is a dramatic rise in LHC luminosity in recent months, it is expected that by next year we will be able to catch the big fish (smart fielders have been placed at all corners)! It is impressive indeed that within just 8 months of LHC run, ATLAS and CMS are in a position to combine their data, which they would for the first time do before the Xmas break, i.e. in a couple of months from now. But we should remember, as has been said by many people many times (most recently by the CERN DG), that if Higgs is found it will be a great discovery, if it is not found (i.e. if it is not there) even then it will be a great (if not greater discovery.

... *by P. Mitra*

Citations of SINP Publications

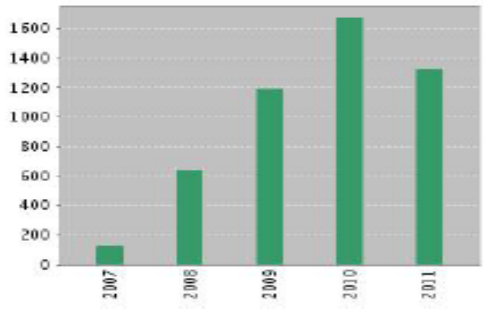
The citation graphs and tables given in our recent Profile have caused some confusion. Here is an attempt to throw some light on the issue.

Consider the papers published from SINP in the years 2007-2011. According to ISI, the number of citations is 4970.

This can be broken up in two ways. One is to show against each year the number of citations from 2007 to 2011 of the publications of that year. This number tends to decrease.

Year	Number
2007	1982
2008	1572
2009	808
2010	527
2011	81
Total	4970

Another way is to show against each year, the number of citations in that year of the publications from 2007 to 2011. This number tends to increase.



Year	Number
2007	129
2008	647
2009	1194
2010	1672
2011	1328
Total	4970

It is also interesting to see the citations of all publications of SINP. These are listed here for each of the years 2007 to 2011.

Year	Number
...	...
2007	2907
2008	3235
2009	3690
2010	3914
2011	2666
All years	37741

The total is more than the apparent sum because it includes citations made in earlier years too.

Academic Activities:

Publications

1. "Discrete R symmetries and F–term supersymmetry breaking" Pritibhajan Byakti, Phys. Rev. D 84, 035019 (2011) .

2. "A possible connection between neutrino mass generation and the lightness of a NMSSM pseudoscalar" A. Abada, G. Bhattacharyya, D. Das and C. Weiland , Phys. Lett. B 700 (2011) 351 .

3. "On the observability of collective flavor oscillations in diffuse supernova background" Sovan Chakraborty, Sandhya Choubey and Kamales Kar ,
Phys. Letts. B 702 209–215 (2011).

4. "Black holestate counting in loop quantum gravity"
A. Ghosh, P. Mitra ... Mod. Phys. Lett. A, Vol. 26, No. 24 (2011) pp. 1817–1823.

5. "Quark Number Susceptibility and Thermodynamics in HTL approximation" ... Najmul Haque, Munshi G. Mustafa , Nucl.Phys. A862–863 (2011) 271–274.

6. "Super–Yang–Mills and M5–branes" Harvendra Singh , JHEP 1108 (2011) 136.

7. "Holographic flows to IR Lifshitz spacetimes" Harvendra Singh , JHEP 1104 (2011) 118.

8.. "Galilean type IIA backgrounds and a map" Harvendra Singh , Mod.Phys.Lett. A26 (2011) 1443–1451.

9. "Energy systematics of heavy nuclei –mean field models in comparison" P. G. Reinhard and B. K. Agrawal , Int. J. Mod. Phys. E 20, 1379 (2011).

10. "Hidden possibilities in controlling optical soliton in fiber guided doped resonamt medium" Anjan Kundu, AIP–Advances 1 (2011) 022137.

11. "Integrable two–fold hierarchyof perturbed equations and application to optical soliton dynamics" Anjan Kundu, Theor Math Phys, 167 (2011) 800–810.

12. "Conserved Density Fluctuation and Temporal Correlation Function in HTL Pertutbation Theory." ... Najmul haque, Munshi G. Mustafa, Markus H. Thoma ... Phys. Rev. D 84, 054009 (2011).

13. "QGP Susceptibilities from PNJL model" ... Sanjoy K. Ghosh, Tamal K. Mukherjee, Munshi G. Mustafa, Rajarshi Roy ... Indian J. Phys. 85 (2011) 87–91.

14."Warm α nucleon matter" ... S. K. Samaddar and J. N. De. Phy. Rev. C 83, 055802 (2011);

15. Phase structure of black branes in grand canonical ensemble,''J X. Lu, S. Roy, Z. Xiao JHEP 1105, 091 (2011).

16."Wilson loops in (p+1)–dimensional Yang–Mills theories using gravity/gauge theory correspondence" S. Chakraborty, S. Roy, Nucl Phys B850, 463–476 (2011).

17. "Radiative and Collisional Jet Energy Loss in Quark–Gluon Plasma" G.Y.Qin, J. Ruppert, Charles Gale, S. Jeon, G.D.Moore, M.G.Mustafa . Indian J. Phys. 85 (2011) 873–877.

Conference

1. G. Bhattacharyya
Plenary talk in International Conference `Lepton–Photon 2011' ... "Electroweak Symmetry Breaking Beyond Standard Model".

2. Anjan Kundu
Talk in International conf on Integrability and coherent structure Reading Univ, UK, July 6–8, 2011
"Nonholonomic deformation of the DNLS equation for controlling optical soliton in doped fiber media"

3. M. G. Mustafa
Talk in "Quark–Hadron and LHC' ... Bombay IIT ..."Vector correlation function and its spectral analysis; Some quantities of QGP in pQCD and LQCD" ... 28 Aug - 30 Aug.

4. J. N. De
Invited talk in "Clusters in nuclei and nuclear matter: Nuclear Structure, Heavy Ion collisions and Astrophysics" 13–17 June, Trento, Italy.

Seminar

1. Kamales Kar, two Lectures at the the University of Calicut
'Death of large stars' (June 28) ,
'Nuclei, chaos and statistical spectroscopy' (June 29).

2. Anjan Kundu,
"Nonlinearrizing linear equations to integrable and perturbed integrable systems"
City University, London (July 17)

3. Anjan Kundu,"Nonlinearization of linear equations and new integrable systems through nonholonomic deformation" DAMTP, Cambridge University (June 27).

4. Satyajit Seth, "Signature of Large Extra Dimension to NLO in QCD at the LHC". 2011 CTEQ Summer Workshop & Conference University of Wisconsin, Madison Wisconsin, USA.

Visits

1. Kamales Kar, Universidad Complutense de Madrid, Spain (June 6–14)

2. Anjan Kundu, City University London (July 11–23)

3. Satyajit Seth, Fermi National Accelerator Laboratory (Fermilab) Batavia, Illinois, USA.

4. J. N. De, Visitor in "Frankfurt Institute of Advance Studies" June 1 – 30, 2011.

End Notes

I. Thoughts across the time

" Either Write something worth Reading or Do something worth Writing" —Benjamin Franklin

2. Do You Know?

Each of our days is derived from some God:

Mon= MOON, Tue= TYR (War God), Wed= WODEN (Father of TYR), Thur=THOR (God of Thunder) , Fri= FRIGG (Goddess of Marriage, Wife of Woden) , Sat = SATURNI (Roman God of Sowing) , Sun = SUN God.

Date : 26.09.2011