

3.15 PM to 4.45 PM

: Academic Session IV

Topic

- : A Gentle Introduction to Numerical Methods-Part I
- : **Dr. K. P. Naveenachandran** Adjunct Faculty, Dept. of Mathematics, Cochin University of Science & Technology, Kochi

**2018 October 13**

9.30 AM to 11.00 AM

: Academic session V

Topic

- : Astro sat-India's First Space Observatory
- : **Dr. Annapoorni Subramaniam**, Scientist C, Indian Institute of Astrophysics, Bangalore, Karnataka

11.00 AM to 11.15 AM

: Tea Break

11.15 AM to 12.45 AM

: Academic session VI

Topic

- : A Gentle Introduction to Numerical Methods-Part II
- : **Dr. K. P. Naveenachandran** Adjunct Faculty, Dept. of Mathematics, Cochin University of Science & Technology, Kochi

12.45 AM to 1.15 PM

: Lunch Break

1.30 PM to 3.00 PM

: Academic Session-VII

Topic

- : Quantum Computations An Introduction
- : **Sri. Prajit Chandran** Asst. Professor in physics Thunjian Memorial Govt. College Tirur, Malappuram, Kerala

3.00 PM to 3.15 PM

: Tea Break

3.15 PM to 4.45 PM

: Academic Session VIII

Topic

- : Quantum Weak Measurements and Applications
- : **Sri. Prajit Chandran** Asst. Professor in Physics Thunjian Memorial Govt. College Tirur, Malappuram, Kerala

4.45 PM to 5.15 PM

: Valedictory Session

**DEPT. OF PHYSICS**

Govt. College, Chittur



PRINCIPAL  
GOVT. COLLEGE  
CHITTUR



Two day National Seminar  
on

Computational Physics:

Simulating  
the Universe

October 12 & 13, 2018  
Venue : Physics Gallery





**2018 October 12**

Physics, the study of nature, received its first paradigm shift when Galileo established the importance of experimentation in the process of discovering the hidden laws of nature. This initiated the branch of experimental Physics. Soon After, the use of mathematical methods in physics, first by Newton, and later, by giants like Laplace, Hamilton, Maxwell and others, ushered in the second paradigm shift in the form of Theoretical physics. These two methods, Experimental and theoretical, has formed the edifice of physics ever since. Around the mid-Twentieth century, the increasing complexity in the mathematics involved, as well as rapid advances in the development of Computers, combined together to open a new pathway of discovery which was later known as Computational physics. It not only helped to crack the most difficult of codes in theoretical physics but also introduced the powerful concept of simulation. This made possible what was once deemed impossible.

The importance of computational methods in present day physics cannot be over emphasized. Any student of physics should have a rudimentary knowledge of computational methods if one is to excel in any field of study which may be as diverse as physics, biology or economics. It is with this viewpoint that the Dept. of physics, Govt College, Chittur is organizing a two day national seminar on computational physics on October 12 & 13, 2018. The sessions are handled by well known personalities who are experts in the fields of Cosmology, Astrophysics, Quantum physics and Quantum computing. We cordially invite you to utilize this opportunity to understand the new method for exploring the unknown.

**Sri. Vijayakrishnan. M. V.**  
Co-ordinator

**Prof. Anand Viswanath. R**  
Principal

8.30 AM to 9.00AM	: Registration
9.00Am to 9.30 AM	: Inaugural session
Welcome Speech	: Prayer
Presidential address	: <b>Dr. Prasia. P</b> Asst. Prof. In Physics, Govt. College Chittur
Inauguration & Inaugural address	: <b>Sri. Vijayakrishnan. M. V.</b> Head, Dept. of Physics
Felicitations	: <b>Prof. Anand Viswanath. R</b> Principal, Govt. College, Chittur
Vote of Thanks	: <b>Sri. Ramabadrnan C. D.</b> Asst. Prof. In Physics, Govt. College Chittur <b>Sri. Jagannathan. C,</b> PTA Secretary <b>Mr. Shabir. M. B, U. U. C</b> <b>Sri. Shinealal. E,</b> IQAC Co-ordinator <b>Smt. Bindu. M,</b> Asst. Prof. In Physics, Govt. College Chittur
<b>9.30 to 11.00 Am</b>	: <b>Academic session I</b>
Topic	: <b>Exploring Nature with Computers-Part I</b> : <b>Dr. K. Indulekha,</b> Prof. & Head, School of Pure and Applied Physics, MG. University, Kottayam (Member, American Association for the Advancement of Science)
11.00 to 11.15 AM	: Tea break
<b>11.15 AM to 12.45 PM</b>	: <b>Academic Session II</b>
Topic	: <b>Exploring Nature with Computers-Part II</b> : <b>Dr. K. Indulekha,</b> Prof. & Head School of Pure and applied Physics, MG. University, Kottayam
12.45 PM to 1.30 PM	: Lunch break
<b>1.30 PM to 3.00 PM</b>	: <b>Academic Session III</b>
Topic	: <b>Computational Quantum Mechanics</b> : <b>Prof. V. N. Purushothaman,</b> Asso. Professor (Rtd) Dept. of Physics, Sree Kerala Varma College, Thrissur
3.00 PM to 3.15 PM	: Tea break



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National Seminar on








'COMPUTATIONAL PHYSICS - SIMULATING THE UNIVERSE'

October: 12 & 13, 2018

Dept. of Physics, Govt. College, Chittur











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Registration Form

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1.	Dr. Sudheesh V.D. Assistant Professor	Dept. of physics NSS College Nemmara	
2.	SANAL KUMAR S Assistant Professor	Dept of instrumentation NSS college, Nemmara.	
3.	Indulekha S - Professor	Dept of Physics M.C. University	
4.	Pneetha. K C Asst. Professor	Dept. of physics S. N. college, Nattai	
5.	Nayana. K Asst. Prof.	Dept. of physics N.S.S college Ottapalam	
6.	Mahsina. K Asst. Professor	Dept. of Physics M.E.S Kalladi College, Manmarkkad	
7.	Priyanka. M M.Sc, Physics, NSS college, Ottapalam		








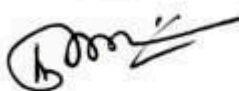




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9.	Dr. Reji : T Asst. Professor	Dept. of Mathematics Govt. College, Chittur	
10	Ruby R Asst. Professor	Dept. of Mathematics Govt College Chittur	
11	Mary Shalini T. J Asst. Professor	Dept. of Mathematics Govt. College Chittur	
12	Deepa. V Asst. Professor	Dept. of Mathematics Govt. College Chittur	
13	Dr. Veena T. G. Asst. Professor	Dept. of Statistics Govt. College Chittur	
14.	Dr. Sarada karanigadon Asst. Professor chemistry. G.C.C	Dept of chemistry G.C.C.	
15.	Saranya C. P Asst. Professor	Dept. of chemistry G. C. C	
16	Benu Mol T. V. Asst Professor	computer science ccc	
17	Pankajakshan. P Asst. Professor GCC	Geography	








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19	Dr. Sasin V.P. Asst. Professor in Electronics	Dept. of Electron. Govt. College Chittur	
20	Dr. G.N. Prasanth Asst. Prof. in Mathematics	Dept. of Mathematics G.C.C.	
21	Dr. Rijulal G. Asst. Prof. in Chemistry	Dept. of Chemistry Govt. College, Chittur	
22	Suresh Kumar K.A. Asst. Professor in Botany	Dept. of Botany, Govt. College, Chittur	
23	Dr. Sojan Asst. Professor in Botany	Dept. of Botany, Govt. College, Chittur	
24	Prajith	Dept. of Botany Govt. College, Chittur	
25	Dr. Shirielal E. Asst. Prof. in Mathematics	Dept. of Mathematics Govt. College, Chittur	
26	Saritha Chandran Asst. Prof. in Mathematics	Dept. of Mathematics, Govt. College, Chittur	
27	Dr. Sajeev Kumar S. Asst. Prof. in Malayalam	Dept. of Malayalam Govt. College, Chittur	



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29.	Dr. Anjana V. R. Asst. Professor in Malayalam	Dept. of Malayalam, Govt. College, Chittur	
30.	Dr. B. Sreekumar Associate Professor	Dept. of Malayalam, Govt. College, Chittur	
31.	Dr. Nishamol M. S. Asst. Prof in Electronics	Dept. of Electronics G.C.C.	
32.	Dr. Sujitha M. Nair Asst. Professor	Dept. of Electronics Govt. College Chittur	





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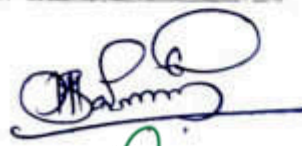

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Sl.No.	Name and Designation	Official Address	Signature
1	Anu Sureshville Assistant Professor.	Dept. of Physics Mercy College, Palakkad.	
2	Nayana.K Asst. Prof.	Dept. of physics N.S.S College, Ottapalam	
3	Preetha. k. c Asst. Professor.	Dept. of Physics S.N. college, Nattika	
4	SANAL KUMAR.S ASST: PROFESSOR	Dept of instrumentation, NSS college, Nemmara.	
5.	Sudheesh V.D. Asst. Professor	Dept. of physics NSS College Nemmara	
6.	Mohsina. k Asst. Professor	Dept. of Physics M.E.S Kalladi College, Mammakkad	
7.	Dr. Reji. T Asst. Professor	Dept. of Mathematics Govt. College Chittur	



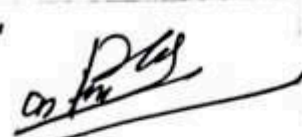


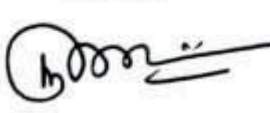





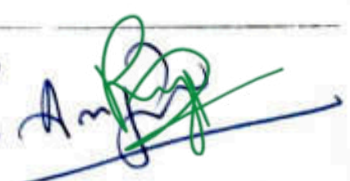
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9.	Mary Shalini T.J. Asst. Professor	Dept. of Mathematics Govt. College Chittur	
10	Deepa.V Asst. Professor	Dept. of Mathematics Govt. College, Chittur	
11.	Dr. Veena T.G. Asst. Professor	Dept. of Statistics Govt. College Chittur	
12.	Smt. Saranya. K.P Asst. Professor	Dept. of Chemistry Govt. College, Chittur	
13.	Binu Mol T.V. Asst. Professor	computer science CCE	
14	Pankajaksham P Asst Professor CCE	Geography	
15	V Govindankutty	Geography	
16	Dr. Saris V.P.	Electronics Govt College Chittur	 






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19	Dr. RIJULAL G. ASST. PROFESSOR	Dept. of Chemistry Govt. College, Chittur	
20	SORESH KUMAR K. A. ASST. PROFESSOR	DEPT. OF BOTANY GOVT COLLEGE CHITTUR	
21	DR. SOJAN ASST. PROFESSOR	DEPT. OF BOTANY GOVT. COLLEGE CHITTUR	
22	PRAJITH (FIP)	DEPT. OF BOTANY GOVT. COLLEGE CHITTUR	
23	Dr. Shirulal E. Associate Professor in Mathematics	Dept. of Mathematics Govt. College, Chittur	
24	SARITHA CHANDRAN ASSISTANT PROFESSOR	DEPT. OF MATHEMATICS GOVT. COLLEGE CHITTUR	
25	Dr. SAJEEV KUMAR S. ASST. PROFESSOR	DEPT. OF MALAYALAM GOVT. COLLEGE CHITTUR	
26	K. RAHIM ASST. PROF. IN MALAYALAM.	DEPT. OF MALAYALAM GOVT. COLLEGE CHITTUR	
27	Dr. ANJANA V.R. ASST. PROFESSOR	Dept. of Malayalam Govt. College, Chittur	



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28	Dr. B. Sreekumar Associate Professor	Department of Malayalam.	
29	Dr. Sangeetha M. Nair Asst. Professor	Dept. of Electronics	
30	Dr. Nishamol M. S. Asst. Professor of Electronics	Dept. of Electronics Govt. College Chittur	





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1	Umae Sreenivilla, Assistant Professor.	Dept. of Physics Mury College	
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3	Sudheesh. v. D Assistant Professor	Dept. of Physics NSS College Nemmara	
4.	SANAL KUMAR-S Assistant Professor	Dept. of instrumentation NSS College, Nemmara	
5-	NAYANR. K ASST. Prof.	Dept. of Physics N.S.S college, Ottapalam	
6	Mohsina. K Asst. Professor	Dept. of Physics M.E.S Kalladi College, Mannarkkad	
7.	Dr. Riji. T Asst. Professor	Dept. of Mathematics Govt. College, Chittur	



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16	V Goundankutty Asst. prof in Geography	Geography GCC	
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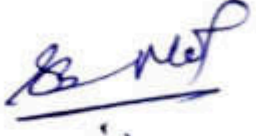



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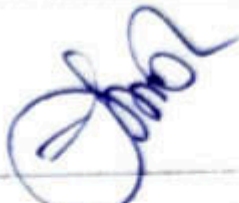
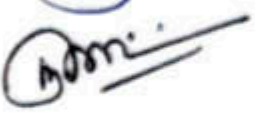



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9.	Mary Shalet T.J. Asst. Professor	Dept. of Mathematics Govt College Chittur	
10	Deepa.V Asst. Professor	Dept. of Mathematics Govt. College Chittur	
11	Dr. Veena TG. Asst. Professor	Dept. of Statistics Govt. College Chittur	
12.	Dr. Sarada Karangedy Asst. Professor	Dept. of Chemistry G.C.C.	
13.	Saraswathi K.P. Asst. Professor	Dept. of Chemistry G.C.C.	
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15.	Pankajakshan P Asst. Professor	Geography G.C.C.	
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20	Suresh Kumar K.A. Assistant Professor	Dept. of Botany Govt. College, Chittur	
21	Dr. SOJAN ASST. PROFESSOR	DEPT. OF BOTANY GOVT. COLLEGE CHITTUR	
22.	PRAJITH (FIP)	DEPT. OF BOTANY GOVT. COLLEGE CHITTUR	
23.	Dr. Shirinlal E. Associate Professor in Mathematics	Dept. of Mathematics Govt. College, Chittur	
24	Saritha Chandran Asst. Prof. in Mathematics	Dept. of Mathematics Govt. College, Chittur	
25.	Dr. SAJEEV KUMAR S. ASST. PROF. IN MALAYALAM	DEPT. OF MALAYALAM GOVT. COLLEGE, CHITTUR	
26.	K. Rahim Asst. Prof in Malayalam	Dept. of Malayalam Govt. College, Chittur	
27.	Dr. Anjana V.R. Asst. Prof. in Malayalam	Dept. of Malayalam Govt. College, Chittur	 PRINCIPAL GOVT. COLLEGE CHITTUR



Name and Designation

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28 Dr. B. Sreekumar  
Associate Professor in  
Malayalam

Dept. of  
Malayalam  
Govt. Col.

29 Dr. Nishamol M.S  
Asst. Professor of  
Electronics

Dept. of Electronics  
Govt. College  
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30 Dr. Suresh. M. Nair  
Asst Professor

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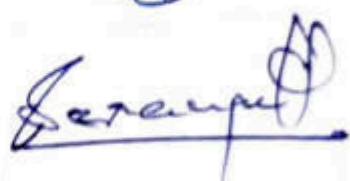

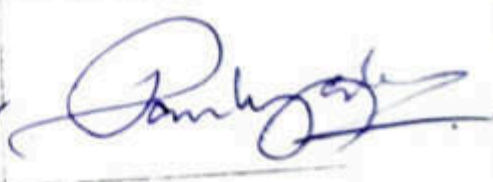


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2.	Preetha. k. C Asst. Professor.	Dept. of Physics S.N. College, Nattai	
3.	SANAL KUMAR.S Assistant Professor.	Dept. of Instrumentation NSS College, Nemmara	
4.	Sudheesh N. D. Assistant Professor	Dept. of physics NSS College Nemmara	
5.	Nayana. K Asst. Prof.	Dept of Physics N.S.S College, Ottapalam	
6.	Mohsina.K Asst. Professor	Dept. of Physics M.E.S Kalladi College, Mannarkkad	
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11	Dr. Veena / G. Asst. Professor	Dept. of Statistics Govt. College Chittur	
12.	Dr. Sarada Karungodas Asst. Professor	Dept of Chemistry G.C.C	
13.	Saravane. K.P Asst. Professor	Dept. of Chemistry G.C.C	
14.	Binnu Mol T.V. Asst. Professor	Computer Science G.C.C.	
15	Pankajakshan P Asst. Professors	Geography G.C.C	
16	V. Govindan Kutty Asst prof. in Geography	Dept. of Geography G.C.C	
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19. Dr. Riyal G. Asst. Prof in Chemistry	Dept. of Chemistry Govt. College, Chittur	
20. SURESH KUMAR K.A. ASST. PROFESSOR	DEPT- OF BOTANY GOVT. COLLEGE, CHITTUR	
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25. DR. SAJEEV KUMAR. S. ASST. PROFESSOR	DEPT OF MALAYALAM GOVT. COLLEGE CHITTUR	
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Name and Designation

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28 Dr. B. SREEKUMAR  
ASSOCIATE PROFESSOR IN  
MALAYALAM

DEPT. OF MALAYALAM  
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29 Dr. Nishamol M S  
Asst. Professor of  
Electronics

Dept. of Electronics  
Govt. College  
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30 Dr. Sujitha. M. Nair  
Asst. professor of Electronics

Dept. of Electronics  
Govt. College  
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**REPORT**

**on**

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**Two Day National Seminar**

**organized by**

**Dept. of Physics, Govt. College, Chittur**

**On**

**October 12 & 13, 2018**

**Sponsored by**

**Directorate of Collegiate Education**

**Kerala**



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**TWO DAY NATIONAL SEMINAR ON 'COMPUTATIONAL PHYSICS -  
SIMULATING THE UNIVERSE'**

A two day national seminar on 'COMPUTATIONAL PHYSICS - SIMULATING THE UNIVERSE' was organized by the Dept. of Physics, Govt. College, Chittur on 12 & 13, October, 2018. The seminar was sponsored by the directorate of Collegiate Education, Government of Kerala. The participants and resource persons arrived at the college premises on 12 & 13, October, 2018. The registration began at 8:45 AM on 12<sup>th</sup> October, 2018 and a total of thirty participants registered their names. The objective to conduct such a seminar on the above said has its own relevance since the rapid development in all areas of Physics necessitates one to keep in touch with every major breakthrough. The topics chosen also highlight this important aspect.

**DAY - 1**

**12 OCTOBER, 2018**

**Inaugural Session**

The function began with a prayer song by the chorus group. Next, Smt. Prasia P., Assistant Professor, Dept. of Physics, Govt. College, Chittur welcomed all the guest participants, resource persons and eminent guests with words and garlands on behalf of the organizing committee. This was followed by the presidential address by Sri. Vijaykrishnan M.V., Head, Dept. of Physics, Govt. College, Chittur, who also was the coordinator of the seminar. It was followed by the ceremonial lamp lighting by Sri Anand Viswanathan R, Principal, Govt. college, Chittur. After the inauguration, Sri Anand Viswanathan K, Principal, Govt. college, Chittur delivered the



  
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inaugural speech. She elaborated on the importance of keeping update with frontier research on every area of Physics, in particular those areas having interdisciplinary character. Next, Sri Ramabadrán C D, Assistant Professor, Dept. of Physics, Govt. College, Chittur, Sri. Jagannadhan C, Secretary, PTA, Govt. College, Chittur, Dr. Shinelal E, IQAC Coordinator, Govt. College, Chittur and Sri Shabir M B, U. U. C delivered felicitation speeches. The inaugural session concluded with a vote of thanks by Smt. Bindu C, Assistant Professor, Dept. of Physics, Govt. College, Chittur.

**9:30 AM to 11:00 AM – Academic Session I – Exploring Nature with Computers Part I:**

The first session by Dr. K Indulekha began at 9:30 AM. The talk focused on the methodology and scope of physics as a study of nature. The different disciplines of physics were introduced and the calculational aspects of these branches were elaborated.

**11:15 AM to 12:45 PM – Academic Session II – Exploring Nature with Computers Part II:**

The second part of the talk by Dr. K Indulekha began at 11:15 AM. The lecturer stressed the need for powerful computing machines. The role of computers in obtaining exact or approximate solutions for physical problems was emphasized.

**1:30 PM to 3:00 PM – Academic Session III – Computational Quantum Mechanics:**

The third academic session was held by Sri. V. N. Purushottaman, on the topic of computational quantum mechanics. The basic principles of quantum mechanics and its applications at an elementary level were presented. The various numerical methods for solving the Schrödinger equation was elaborated and some sample problems were solved using special computational techniques. The lecture helped in understanding the practical side of quantum theoretical calculations.



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**3:15 PM to 4:45 PM – Academic Session IV – A Gentle Introduction to Numerical Methods**

– **Part I:** The fourth session dealt with an introduction to the basic aspects of numerical computing. It was presented by Dr. K P Naveenachandran. Several useful numerical techniques like the Monte Carlo method were presented replete with examples.

**DAY - 2**

**13 OCTOBER, 2018**

**9:30 AM to 11:00 AM – Academic Session V - Astrosat – India's First Space Observatory:**

The first session of the second day of the seminar was on Astrosat, India's first space observatory. The talk was delivered by Dr. Annapoorni Subramaniam. Starting from the basics of observational Astrophysics, the talk proceeded to the latest technological innovations in the field of space physics. It introduced the Astrosat satellite and the details of the mission were clearly outlined. The talk provided much motivation in this field of contemporary research.

**11:15 AM to 12:45 PM – Academic Session VI – A Gentle Introduction to Numerical**

**Methods – Part II :** The second part on the numerical methods of mathematical physics dealt with some advanced topics which are very important in the current research field of computational physics. Some simple but important problems were solved using these techniques and the talk provided a pathway to the exciting field of numerical computing.

**1:30 PM to 3:00 PM – Academic Session VII – Quantum computation An introduction:**

The talk was presented by Dr. Prajit Chandran and dealt with one of the most exciting new fields of applied physics. The basic ideas of classical computing were first elaborated and then the specialties of quantum mechanics were presented. This was followed by a detailed analysis of



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the techniques of quantum computing and the radical difference between classical and quantum computational techniques were clearly brought out.

**3:15 PM to 4:45 PM – Academic Session VIII – Quantum Weak Measurements and**

**Applications:** The last part of the seminar dealt with the modern field of quantum weak measurements. The talk was delivered by Dr. Prajit Chandran. The basics of classical measurement theory were first outlined. Then the peculiar aspects of quantum measurements were detailed. The mysterious nature of quantum world, and its opposition with common sense notions, were clearly explained and the wide disparity in the viewpoints classical and quantum theories were brought out.

**4:45 PM to 5:15 PM: Valedictory session** – The two day seminar concluded with the valedictory session. Feedback from the participants formed the most important part. The session concluded with the National Anthem.



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Prayer



Welcome speech by Dr. Prasia P, Assistant Professor, Dept. of Physics, Govt. College, Chittur



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Presidential address by Sri Vijayakrishnan M V, Assistant Professor & Head, Dept. of Physics, Govt. College, Chittur and also, the Coordinator of the seminar



Inauguration



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Inauguration Ceremony



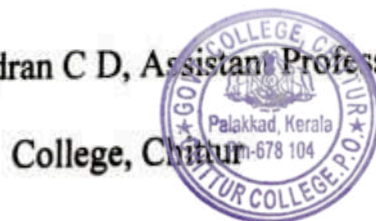
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Inaugural address by Prof. Anand Viswanathan R, Principal, Govt. College, Chittur



Felicitation speech by Sri. Ramabadrnan C D, Assistant Professor, Dept. of Physics, Govt.



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Felicitation speech by Sri. Jagannadhan C, Assistant Professor, Dept. of Physical Education, Govt. College, Chittur



Felicitation speech by Sri. Shabir M B, U.C.C. Govt. College, Chittur



  
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Vote of Thanks by Smt. Bindu C, Assistant Professor, Dept. of Physics, Govt. College, Chittur



Audience



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