

PMRF-ISSS Teaching Programme

Prime Minister Research Fellowship students' teaching requirement
facilitated by the Institute of Smart Structures and Systems



Module **PMRF-ISSS013/II/2023**

Advanced applications of Quantum mechanics and introduction to Quantum field theory

Name of the PMRF student

Sreemayee Aditya

Required background of the students taught

This lecture series would be beneficial for students pursuing undergraduate/postgraduate studies in physics and engineering. Basic knowledge of Quantum mechanics can be helpful.

Online session coordinator

Will be chosen from the list of registrants

Details of the content of the module

Relation between Quantum mechanics and Quantum field theory (2 lectures)

Relativistic Quantum mechanics: Lorentz invariance, Poincare invariance, Klein-Gordon Equations, Dirac Equations (4 lectures)

Formalism of Field theory (6 lectures)

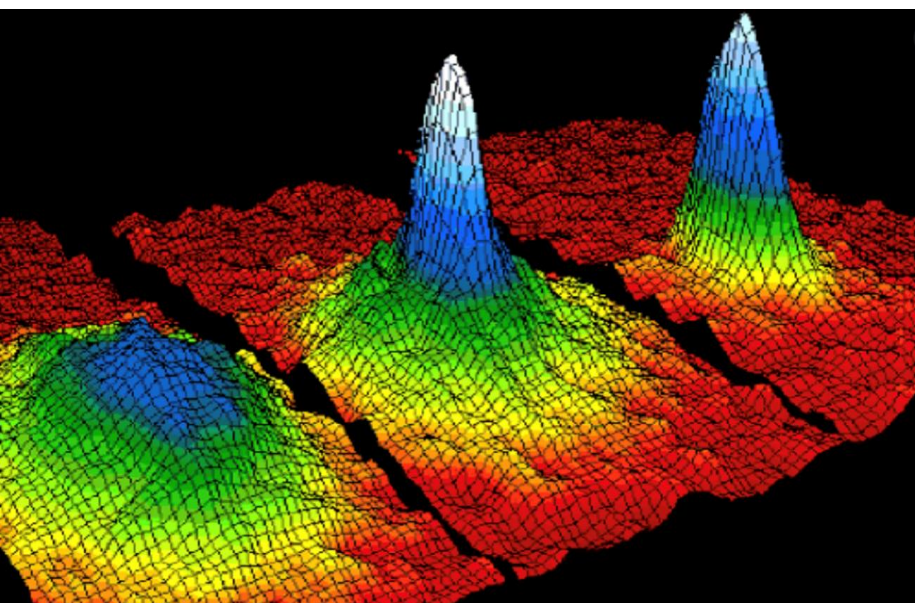
Bosonic field theory (8 lectures)

Fermionic field theory (8 lectures)

Electromagnetism and quantization of electromagnetic fields (4 lectures)

Scattering matrix formalism (4 lectures)

CPT invariance (2 lectures)



Schedule of the module

Saturdays- 9:30 AM -11 AM.

Sundays-9:30-10:30 AM.

(2:30 hour class/ week)

The duration of the lecture series will be from 19th August to 15th December, tentatively.

Meeting link : Will be shared later

Link

Contact email ID: iss.forum@gmail.com

Registration link:

<https://forms.gle/kTzZaF5hCk...57A>