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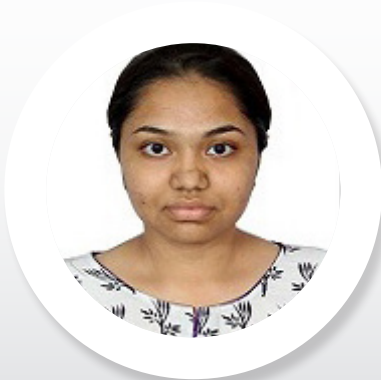
## A new approach to the generalization of Planck's law of black-body radiation

In this study, Planck's law of black-body radiation has been modified within the framework of nonextensive statistical mechanics. The average energy of radiation has been derived by introducing the nonextensive partition function in the statistical relation of internal energy. The spectral energy density and spectral radiance have also been computed. The derived expression has been compared with the earlier developed approximate schemes (i.e. asymptotic approach and factorization approach) and with the recently obtained exact result. We utilize the exact and approximate Stefan-Boltzmann laws in order to compare with the new approach introduced here.

### Biography

Sreeja Loho Choudhury has completed her Bachelor's degree in Physics from St. Xavier's College, Ahmedabad, India. She did her Master's degree in Physics from Birla Institute of Technology, Mesra, Ranchi, India. She has now joined her PhD at the Institute for Theoretical Physics, Technical University in Dresden, Germany in the month of April, 2018. She is working in the Field of Atomic and Molecular Physics, and her Master's thesis was about generalizing the Planck's law of Radiation and Applying It to Plasma Physics. Her Bachelors thesis was about studying the Effect of Charge-State Ratios on the Flow of Solar Wind.

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