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Phys 343 project

Bosons and Fermions

Particles in statistical mechanics and quantum field theory are distinguished by the statistics they obey, either Bose-Einstein (BE) or Fermi-Dirac (FD) statistics. The first are called **Bosons**, and the latter are known as **Fermions**. There is a deep relation between the spin of a particle and the statistics it obeys, if the spin of a particle is an integer n, then it obeys BE statistics, if it was $n + \frac{1}{2}$, then it obeys FD statistics.

In this project you shall study the differences between Bosons and Fermions in terms of statistics and basic properties, you can include:

1. BE and FD statistics
2. Overview of Bosons and Fermions
3. Importance of bosons and fermions in particle physics.

You should include the references in your project

○ Kaniadakis, G., & Quarati, P. (1994). Classical model of bosons and fermions. Physical Review E, 49(6), 5103.
○ Leo Kadanoff, Perimeter Institute statistical physics Lecture Notes (2009).

Best Regards,

Dr Salwa Alsaleh