COLÓQUIOS DA PÓS-GRADUAÇÃO 2024

Generalization of Balian-Brezin decomposition for exponentials with linear fermionic part

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Fermionic Gaussian states have attracted considerable interest due to their remarkable properties, particularly Wick's theorem. Building on the work of Balian and Brézin, we extend their formalism to Gaussian operators with a linear component. Using Colpa's method, we generalize the Balian-Brézin decomposition (BBD) to include exponentials with linear terms. We introduce Gaussian states featuring a linear part, derive corresponding overlap formulas, and extend Wick's theorem to incorporate linear terms, simplifying the expression of expectation values and reducing them to expressions involving one- and two-point correlation functions. Finally, we discuss the relevance of the BB decomposition in relation to the BCH (Zassenhaus) formulas for the $\mathfrak{so}$ (N) Lie algebra.

16 OUT

17:00 HRS
SALA 201 (TORRE VELHA) - IF UFF