

#Jenny



Finally I get this ebook, thanks for all these I can get now!

#Rio



Cool! I'am really happy

#Markus Jensen



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My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

Commutation Relations

Exchange symmetries of states \Leftrightarrow Commutation relations between operators

$$|n_a, n_b, \dots, n_c, \dots\rangle = \frac{(\hat{a}_a^\dagger)^{n_a}}{\prod_{m_a=0}^{n_a-1} C(m_a)} \dots \frac{(\hat{a}_b^\dagger)^{n_b}}{\prod_{m_b=0}^{n_b-1} C(m_b)} \dots \frac{(\hat{a}_c^\dagger)^{n_c}}{\prod_{m_c=0}^{n_c-1} C(m_c)} |\Phi\rangle \quad \text{Fock space}$$

$|\Phi\rangle = |0, 0, \dots\rangle$ is the "vacuum".

$$\text{For fermions, } n_a = 0, 1 \rightarrow \prod_{m_a=0}^{n_a-1} C(m_a) = 1 \quad \forall a$$

Exchange symmetries are established by requiring $[\hat{a}_a^\dagger, \hat{a}_b^\dagger]_{\mp} = 0$ Boson
Fermion

$$[a, b]_{\mp} \equiv ab \mp ba = \begin{cases} [a, b] & \text{Commutator} \\ \{a, b\} & \text{Anti-commutator} \end{cases}$$

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Operator Commutation Relations