

Dr Salwa Alsaleh
Dept. of Physics and Astronomey
College of Science- King Saud University
Riyadh 11451- Saudi Arabia
☎ +966 (11) 80 52458
✉ salwams@ksu.edu.sa
🏠 fac.ksu.edu.sa/salwams

Phys 453 project

Cherent states and squeezed states

The time evolution and uncertainty relations the quantum harmonic oscillator stationary states do not recover the classical dynamic evolution of the harmonic oscillator. This happens in many quantum systems,as well. In this project you shall learn the concept of coherent states and squeezed states that recover the classical dynamics in the limit $\hbar \rightarrow 0$. You will summerise what you learn from the references in the following points:

1. Overview of the quantum harmonic oscillator
2. Coherent states
3. Squeezed states
4. Importance in applications

You should include the references in your project, the main one is from MIT opecourseware Quantum Mechanics II.

Best Regards,

Dr Salwa Alsaleh