abstract

Members Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

35 years ago Wehrl defined a classical entropy of a quantum density matrix using Gaussian (Schr\"odinger, Bargmann, ...) coherent states. This entropy, unlike other classical approximations, has the virtue of being positive. He conjectured that the minimum entropy occurs for a density matrix that is itself a projector onto a coherent state and this was proved about a year later. It was then conjectured that the same thing would occur for SU(2) coherent states (maximal weight vectors in a representation of SU(2)). This conjecture, and a generalization of it, have now been proved with J.P. Solovej. (arxiv: 1208.3632).

After a review of coherent states in general, a summary of the proof will be given. Obviously, one would like to prove similar conjectures for SU(n) and other Lie groups. This is open and the audience is invited to join the fun. Another question the audience is invited to think about is the meaning of all this for group representation theory. If this conjecture is correct, it must have some general significance