



Quantum Physics

Parameter-free ansatz for inferring ground state wave functions of even potentials

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Schrödinger's equation (SE) and the information-optimizing principle based on Fisher's information measure (FIM) are intimately linked, which entails the existence of a Legendre transform structure underlying the SE. In this communication we show that the existence of such a structure allows, via the virial theorem, for the formulation of a parameter-free ground state's SE-ansatz for a rather large family of potentials. The parameter-free nature of the ansatz derives from the structural information it incorporates through its Legendre properties.

Subjects: **Quantum Physics (quant-ph)**; Mathematical Physics (math-ph)

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