

Abstract Submitted
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(Quasi)-Convexity Formulation of a Multi-Minima, Variational, Quantization Method CARLOS HANDY, Texas Southern University — Barta's ground state energy bounding theorem states that the $E_L = \text{Inf} (H\Phi(x)/ \Phi (x))$ and $E_U = \text{Sup} (H\Phi(x)/ \Phi (x))$ for an arbitrary, positive, bounded, configuration, $\Phi(x)$, define lower and upper bounds, respectively, to the bosonic ground state energy: $E_L < E_{ground} < E_U$. Searching for the x -values corresponding to the infimum (Inf) and supremum (Sup) is a multi-extrema plagued process, particularly in multidimensions. We can reformulate Barta's configuration space analysis in terms of the *Moment Problem*, via a Generalized Eigenvalue Problem representation. This removes all multi-extrema considerations, recasting the original variational problem as one involving (quasi)-convexity optimization. We outline the procedure, and apply it to some, illustrative problems.

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