# Post Gaussian Approximation for Bose-Einstein condensates

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In this work, we attempt to go beyond the mean field approximation to overcome the absence of fluctuations and correlations in a dynamic system consisting of a Bose-Einstein condensate. The technique was variational, and thus very consistent, by maintaining a balance between technical details and correct physics. The first step was to include the triple correlations. The result was a set of dynamic equations. We are also expanding our work to include the hydrodynamic approach by incorporating its equations, utilizing these correlations and how they affect it, along with calculating some collective modes and their impact on the bosonic system..

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