A Self-consistent Treatment of the Dynamics of Stable and Unstable Collective Modes ◇

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We address the dynamics of damped collective modes in terms of first and second moments. The modes are introduced in a self-consistent fashion with the help of a suitable application of linear response theory. Quantum effects in the fluctuations are governed by diffusion coefficients $D_{\mu\nu}$. The latter are obtained through a fluctuation dissipation theorem generalized to allow for a treatment of unstable modes. Numerical evaluations of the $D_{\mu\nu}$ are presented. We discuss briefly how this picture may be used to describe global motion within a locally harmonic approximation.

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see: http://www.physik.tu-muenchen.de/tumphy/e/T36/hofmann.html)

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