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**Large-deviations and Condensation of Fluctuations in
Equilibrium and Off-equilibrium Systems**

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Abstract:

We present the exact calculation of the large deviation function of the spontaneous fluctuations of macroscopic observables (such as energy, exchanged heat etc. ..) in the equilibrium or non-equilibrium regime of classical systems described by solvable models of Statistical Mechanics, as the spherical model and others. In the distributions which in some cases may be attributed to a phenomenon of condensation of fluctuations resembling the Bose-Einstein condensation: Large fluctuations can only be developed when a macroscopic fraction is provided by a cusp the relevance and generality of such a behavior and its implications.