

Minimum energy and derivative energy distributions

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Based on the energy functional we define minimum energy distributions. This functional applied to the derivative of a probability density function generates another functional whose minimization yields the minimum derivative energy distribution. A linear combination of these functionals is also considered and its minimal point define the minimum energy and derivative energy distribution. We derive a set of algebraic and integral equations from which it is possible to determine minimum energy distributions. In case we are interested in minimum derivative energy distributions or in minimum energy and derivative energy distributions, we obtain sets of differential and integral equations that must be fulfilled by these distributions. Constraints on the moments of all these distributions are considered. Examples are given.

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