Statistical Dynamics of Dispersion-managed Optical Solitons

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The statistical dynamics of dispersion-managed optical solitons is studied in presence of stochastic perturbation term, by the aid of soliton perturbation theory. The super-Gaussian pulses are considered and the corresponding langevin equations are derived and analysed. It is shown that in presence of the perturbation term, the soliton propagates through the fiber with a fixed mean value of the soliton energy.