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Tobias B Schaefer* (tobias@math.csi.cuny.edu), Department of Mathematics, Building 1S Room 209, The College of Staten Island, Staten Island, NY 10314. *Influence of microscopic noise on the large-scale evolution of dispersion-managed solitons.*

I will present three methods to coarse-grain noise in stochastically perturbed nonlinear systems with scale-separation. The first method applies random solvability conditions to the stochastic equations directly, the second method uses an asymptotic expansion of the associated Fokker-Planck equation, and the third method is based on a multi-scale expansion of the corresponding path integral kernels. All three methods can be applied to characterize the influence of random dispersion fluctuations on dispersion-managed solitons. (Received February 28, 2007)