Effects of disorder on the optical properties of Frenkel excitons ABDELKRAM BOUKAHIL, ROBERT SIEMANN, University of Wisconsin-Whitewater — The Coherent Potential Approximation (CPA) is used to study the effects of disorder on the absorption line shapes of Frenkel excitons in one-, two-, and three-dimensional systems. A Gaussian distribution of transition frequencies with rms width $\sigma$ was used. Several values of the disorder parameter $\sigma$. The CPA results show that short tails on the high-energy side of the peaks are $\sigma$ dependent, and long tails on the low-energy side of the peaks are independent of the disorder parameter $\sigma$. 

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