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**Anderson localization in one-dimension with Levy-type disorder**

DAVID MAYETT, JENNIFER SCHWARZ, Syracuse University — Abstract: Quantum transport through disordered systems has been the subject of extensive research since Anderson's seminal theory of localization. Motivated by experimental realizations of light transport across media exhibiting Levy-type fluctuations, we study the one-dimensional Anderson model where the random site energies are governed by a probability distribution with a broad tail, otherwise known as Levy-type. We numerically compute the Lyapunov exponent and its variance. This exponent is a self-averaging quantity whose inverse in certain cases can be used to define the localization length. Furthermore, we check for the validity of single parameter scaling (SPS), and its dependence on the Levy index.

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