Some recent results on local eigenvalue statistics for random Schrödinger operators

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This review talk will cover some recent results concerning random Schrödinger operators by the presenter and others focusing on local eigenvalue statistics. Random Schrödinger operators in three or more dimensions are expected to exhibit a localization-delocalization transition for weak disorder at some energy. It is anticipated that the local eigenvalue statistics in the localized phase is Poissonian whereas in the delocalized phase the local eigenvalue statistics is similar those of the Gaussian orthogonal ensemble in random matrix theory. Two simple models exhibiting such a transition, a random band matrix model and the scaled disorder model, will be discussed.