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Strong disorder renormalization group study of Anderson localization H. JAVAN MARD, V. DOBROSAVLJEVIĆ, National High Magnetic Field Laboratory and Florida State University, J.A. HOYOS, Instituto de Física de São Carlos, University of São Paulo, E. MIRANDA, State University of Campinas, Brazil — We formulate a Strong Disorder Renormalization Group (SDRG) approach, to investigate $1D$ tight-binding models with simultaneous presence of random site energies and random hopping elements. We show that the beta function (describing the scaling properties of the conductance) can, under certain conditions, be obtained from an analytical solution of the appropriate SDRG flow equations, and we find excellent agreement with the results obtained from (numerically) exact transfer matrix calculations. We also show that, for the purposes of calculating the conductance, current conservation assures that the SDRG decimation represents an exact procedure for any amount of disorder. Our study demonstrates that the particle-hole symmetric model (no site disorder) represents an unstable but universal fixed point of the SDRG flows. In contrast, for the generic model where both disorder types are present, the system flows toward a *line of fixed points*, corresponding to different amounts initial (site) disorder, thus implying a non universal form of the beta function.

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