LOCALIZATION FOR TRANSVERSALLY PERIODIC RANDOM POTENTIALS ON BINARY TREES

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We consider a random Schrödinger operator on the binary tree with a random potential which is the sum of a random radially symmetric potential, Q_r, and a random transversally periodic potential, Q_t, with coupling constant κ. Using a new one-dimensional dynamical systems approach combined with Jensen's inequality in hyperbolic space (our key estimate) we obtain a fractional moment estimate proving localization for small and large κ. Together with a previous result we therefore obtain a model with two Anderson transitions, from localization to delocalization and back to localization, when increasing κ. As a by-product we also have a partially new proof of one-dimensional Anderson localization at any disorder. This is joint work with Richard Froese, Darrick Lee, Christian Sadel, and Günter Stolz.