1086-82-294 **Mei Yin*** (myin@math.utexas.edu), Department of Mathematics, University of Texas at Austin, 2515 Speedway Stop C1200, Austin, TX 78712. *A Markov chain approach to renormalization group transformations.*

We aim at an explicit characterization of the renormalized Hamiltonian after decimation transformation of a one-dimensional Ising-type Hamiltonian with a nearest-neighbor interaction and a magnetic field term. To facilitate a deeper understanding of the decimation effect, we translate the renormalization flow on the Ising Hamiltonian into a flow on the associated Markov chains through the Markov-Gibbs equivalence. Two different methods are used to verify the well-known conjecture that the eigenvalues of the linearization of this renormalization transformation about the fixed point bear important information about all six of the critical exponents. This illustrates the universality property of the renormalization group map in this case. (Received August 16, 2012)