On Invariant Random Subgroups of Block-Diagonal Limits of Symmetric Groups

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Abstract: We classify the ergodic invariant random subgroups of block-diagonal limits of symmetric groups in the cases when the groups are simple and the associated dimension groups have finite dimensional state spaces. These block-diagonal limits arise as the transformation groups (full groups) of Bratteli diagrams that preserve the cofinality of infinite paths in the diagram. Given a simple full group G admitting only a finite number of ergodic measures on the path-space X of the associated Bratteli diagram, we prove that every non-Dirac ergodic invariant random subgroup of G arises as the stabilizer distribution of the diagonal action on X^n for some n ≥ 1. As a corollary, we establish that every group character χ of G has the form χ(g) = Prob(g ∈ K), where K is a conjugation-invariant random subgroup of G.