

POINCARÉ SERIES OF NORMAL SUBGROUPS OF KLEINIAN GROUPS

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ABSTRACT. We show that some results on the Poincaré series of normal subgroups of Kleinian groups have their natural home within thermodynamic formalism. This includes a result of Brooks which states under certain conditions that, for a normal subgroup N of Kleinian group G , we have that $\delta(N) = \delta(G)$ if and only if G/N is amenable, where δ refers to the exponent of convergence of the associated Poincaré series. Another result, due to Falk and Stratmann and to Roblin, shows that $\delta(N)$ is bounded below by half of $\delta(G)$ and that this inequality is strict whenever G is of divergence type.