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STATISTICS FOR KNESER p-NEIGHBORS

WITH AN APPENDIX BY OLIVIER TAÏBI

BY GAËTAN CHENEVIER

ABSTRACT. — Let L and L' be two integral Euclidean lattices in the same genus. We give an asymptotic formula for the number of Kneser p-neighbors of L that are isometric to L', when the prime p goes to infinity. In the case when L is unimodular, and if we fix furthermore a subgroup $A \subset L$, we also give an asymptotic formula for the number of p-neighbors of L containing A and which are isomorphic to L'. These statements explain numerical observations in [1], [4], and [12].

In the Appendix, O. Taïbi shows, from Arthur's results, how to deduce the existence of global parameters associated to automorphic representations of definite orthogonal groups over the rationals.

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