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Institut f. Analysis und Computational Number Theory (Math. A)

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# Weakly admissible lattices and discrepancy results


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A lattice in $\mathbb{R}^n$ is called admissible if there exists a positive constant $c$ such that for every non-zero lattice point the modulus of the product of the coordinates is at least $c$. Generalising results of Hardy and Littlewood for $n = 2$ Skriganov has shown that the lattice points of an admissible lattice are extremely uniform distributed in aligned boxes. However, the set of admissible lattices in $SL_n(\mathbb{R})/SL_n(\mathbb{Z})$ is a null set. We generalise the notion of admissibility and introduce a quantity to measure its failure. We then shall discuss recent discrepancy results for "weakly admissible" lattices.


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