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Dmitry Kleinbock and **Nick Wadleigh***, wadleigh@brandeis.edu. *Inhomogeneous Dirichlet's Theorem and shrinking targets.*

Dirichlet's theorem states that for a real $m \times n$ matrix,

$$\|Aq + p\|^m < \frac{1}{t}, \|q\|^n \leq t$$

has nontrivial integer solutions for all $t \geq 1$. Davenport and Schmidt have observed that if $\frac{1}{t}$ is replaced with $\frac{c}{t}$, $c < 1$, almost no A has the property that there exist solutions for sufficiently large t . Replacing $\frac{c}{t}$ with an arbitrary function, it's natural to ask when precisely does the set of such A drop to a null set. We do not answer this question, but the analogous inhomogeneous question seems to be amenable to the tools of dynamics on the space of affine lattices. Namely, we give a necessary and sufficient condition on a function ψ such that for almost all pairs (A, b) where A is an $m \times n$ matrix and b an m -tuple, the system

$$\|Aq + b + p\|^m < \psi(t), \|q\|^n \leq t$$

has integer solutions for all large enough t . (Received January 26, 2016)